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Lard and Strychnine.

A short time since a paragraph was published in a number of our papers, it which it was stated that lard was an antidote for that terrible poison, strychnine. B. Keith, M.D., of this city, in a communication to the *Eclectical Medical Journal*, states that he has been experimenting, in order to verify or disprove the correctness of the lard antidote. He operated upon a strong and healthy dog, to which he administered 8 ounces of lard, and five minutes after one grain of strychnine. In six hours after taking this small quantity of strychnine the poor dog breathed his last. This experiment proves conclusively that lard is not an antidote to this frightful poison.

Drying up Rivers.

Turning Rivers from their Courses.—The Calaveras *Chronicle* says :—Great apprehension is being felt by those having river claims, in consequence of the probability that the whole stream of the Mokelumne river will be diverted from its natural channel by the numerous new ditches being projected. That this must be the case at some time or another is inevitable. But few years will pass by ere every mountain stream will be lifted from its natural bed, and made to subserve the purposes of the miner; and should any Rip Van Winkle rouse from his somnolency of twenty years, he would be sorely puzzled to find the original channels in which he used to dig and delve, and dam and flume in search of the glittering ore.

What Circular Saws can do.

The Wolverine *Citizen*, published at Flint, Mich., contains quite an article on the above subject, and presents some astounding statistics of what was done at East Saginaw, at Durfee & Atwater's saw mill, by a large circular saw. In 11 hours and 15 minutes it cut 26,425 feet of inch boards. This throws all the feats of saws, which we have published, entirely into the shade.

Cure for Rattlesnake Bite.

The following is from the last number of the Wisconsin *Farmer*:—"Take the yolk of a good egg, and put it in a teacup; stir in with it as much salt as will make it thick enough not to run off. Spread it as a plaster and apply it to the wound, and we will insure your life for a sixpence." If this is a reliable receipt it is the most simple one we have yet seen for the purpose; but we want evidence of its value.

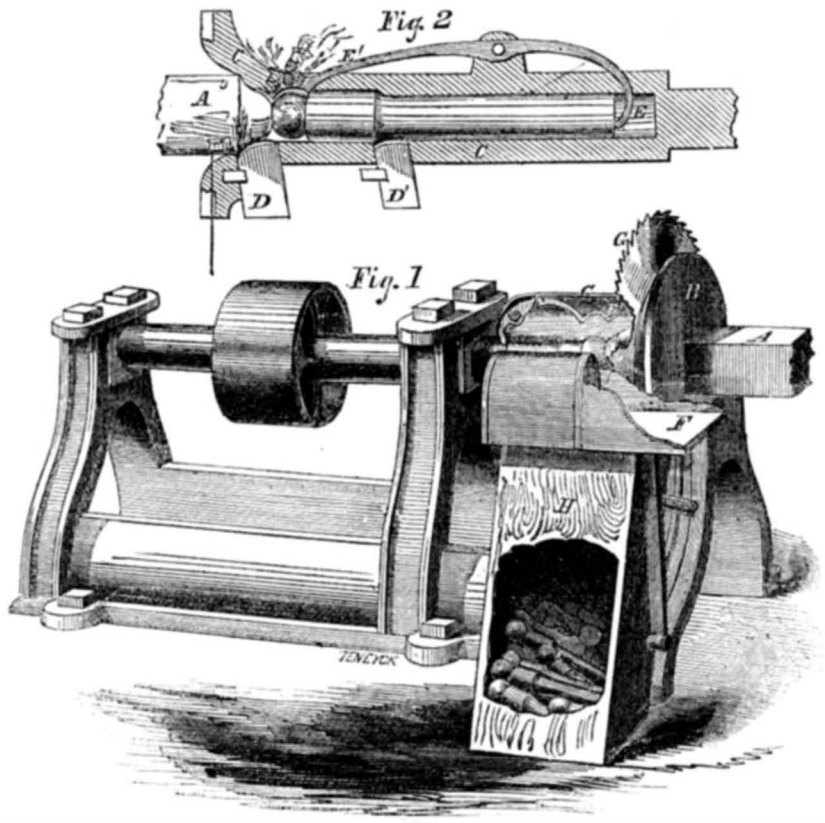
More Gold.

Nearly two million dollars of gold arrived at this port by the "George Law," on the 16th inst Copious rains had fallen in California, rewarding miners with a harvest of yellow metal.

Electric Clocks.

The city of Marseilles, in France, is about to establish a system of electric clocks throughout all its streets. The dials of these clocks are to be placed in gas lamps, so that the time can be read by night as well as day. This is an excellent idea, and will, we think, yet be adopted in all cities lighted with gas.

MACHINE FOR TURNING CLOTHES PINS.



Clothes Pin Machine.

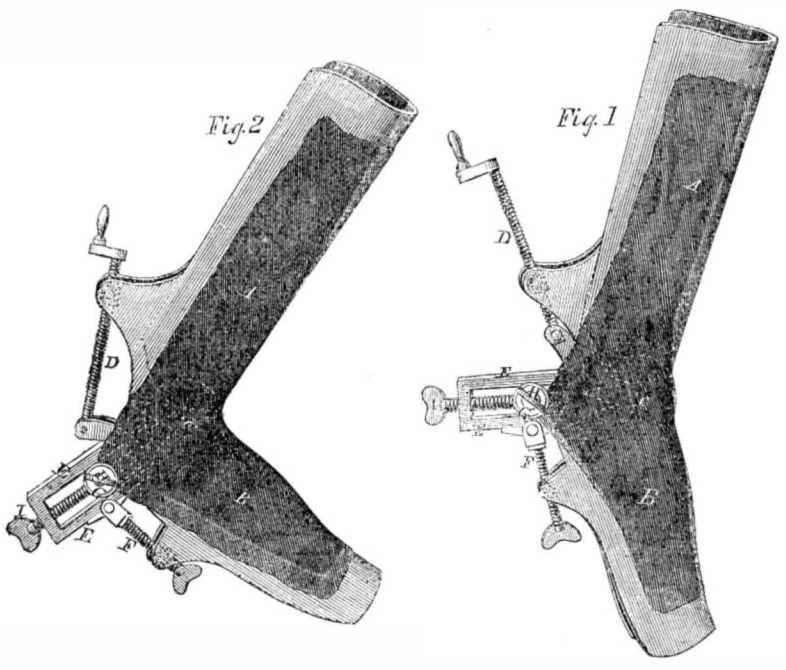
In this improvement the rough stick of wood, A, out of which pins are turned, is shoved through an aperture in the face of the machine, B, where it enters a revolving hollow mandrel, C (fig. 2.) At the entrance to the mandrel the stuff meets the cutter, D, which reduces it to a uniform rotundity, and admits it to the interior of the mandrel. Cutter D′ reduces the stuff still more, so as to form the shoulder of the pin. When the end of the stick reaches the further extremity of the mandrel it comes in contact with the pivoted lever cutter, E, and throws it up, bringing down the other end upon the stuff; this end, E′, is furnished with a peculiar-shaped cutter, which cuts the head of the pin. In figure 1 the cutting end E′ is thrown up away from the stuff; in fig. 2 it is seen in the act of cutting the pin head.

The stick having had a pin thus turned upon it is withdrawn from the mandrel, the end placed on the table, F, and moved against saw G, which severs the pin, and it drops into the box, H, below, ready for the slitting saw. The stick is then shoved into the mandrel again, a new pin turned, &c. The saw, G, is placed upon and revolves with mandrel, G; this saves extra gearing. Centrifugal force keeps the lever cutter in the position seen in fig. 1, except when it is pressed into cutting position by the end of the stick as in fig. 2.

This machine is applicable to the cutting of bedstead pins, and other forms. One man, we are told, can turn out from thirty to forty pins per minute. It is strong, simple, and effective. Mr. Curtis Goddard, of Edinburgh, Portage Co, Ohio, is the inventor, who will give further information.

Patented May 2, 1854.

IMPROVED BOOT CRIMPING APPARATUS.



New Boot Crimp.

The invention herewith illustrated is composed of two pieces, A B, a leg and foot, resembling an ordinary crimping board when placed together, but jointed at C, the point which represents the instep. By means of this joint, and the employment of a screw, D, the leg and foot are made to assume different positions in respect to each other, namely, from a position in which both are stretched out comparatively straight, as in fig. 1, to one in which they are bent together in a form a similar to that of a human foot and leg, as in fig. 2; this latter is the shape to which it is necessary permanently to reduce to leather in crimping. On pin C, which connects the leg and foot together, a guide, E, is hung, which is caused by a swivel thumb-screw, F, in connection with the foot, to radiate and assume different positions. This guide, E, is furnished with a slide, G, on the sides of which are circular washers, tightened by screws, H; these washers serve as pincers to grasp the edges of the leather at the instep. The slide, G, with its pincers, is caused to traverse the guide, E, by means of a thumb screw. F. When the leg and foot have been bent to their straightest position, figure 1, the leather is applied over their front edges, in such a manner that each corner is held by the pincers, G. The latter are moved out by means of screw, I, so as to stretch the leather comparatively tight at the instep. By means of the regulating screw, D, the foot of the apparatus is then bent over until it assumes the desired position in respect to the leg, stopping at intervals during the operation, in order to rub down, with the pane of a hammer or other hard and smooth instrument, the creases which collect at the instep, and occasionally stretching the leather tighter over the latter by means of the screw, or varying the direction of the stretch by turning screw, F, The whole is so arranged and constructed that the condensation of one part of the leather and the stretching of other parts (necessarily involved in crimping) is accomplished with such regularity and precision, that no wounding, cracking, or other deterioration of the leather takes place, as in ordinary crimping machines; thus permitting the successful crimping of upper leathers of boots of the finest quality, which have been hitherto required the hand process. The leg and foot parts are made of metal, hollow.

This invention appears to be one of a very valuable character. It greatly diminishes the labor required in boot crimping, while the work it produces is of a superior kind. We learn that it gives the highest satisfaction among all who have had it in use. The inventor is Mr. George Fetter. Further information can be had by addressing Messrs. Fetter and Sowerby, Holmesburg, Philadelphia, Pa. Patented March 4, 1856.

An American Printing Press for London.

One of Hoe's celebrated six-cylinder printing presses—with experienced workmen to superintend it—was sent from this city by the *Ericsson*, on the 10th inst. It is to be used for printing *Lloyd's Weekly Newspaper*, in London. This is a large first class weekly journal, having a circulation of 140,000 copies. The time was when we used to import our printing presses from London, but the tables have turned in our favor, and we are paying back our debt with compound interest.

Terrible Railroad Accident.

On the 6th inst. a train on the Panama railroad was precipitated through a bridge, the timbers of which gave way, and nine cars filled with passengers, were crushed to pieces, and no less than 50 persons killed. It was a heartrending scene. The passengers were mostly from New-York, on their way to San Francisco.

A most terrible explosion of a steam boiler took place in the city of Albany, on the 15th ult. We shall review the evidence given by engineers on the Coroner's inquest, in our next number.

The City of Cincinnati has seven steam fire-engines, that do all the work of the Fire Department.

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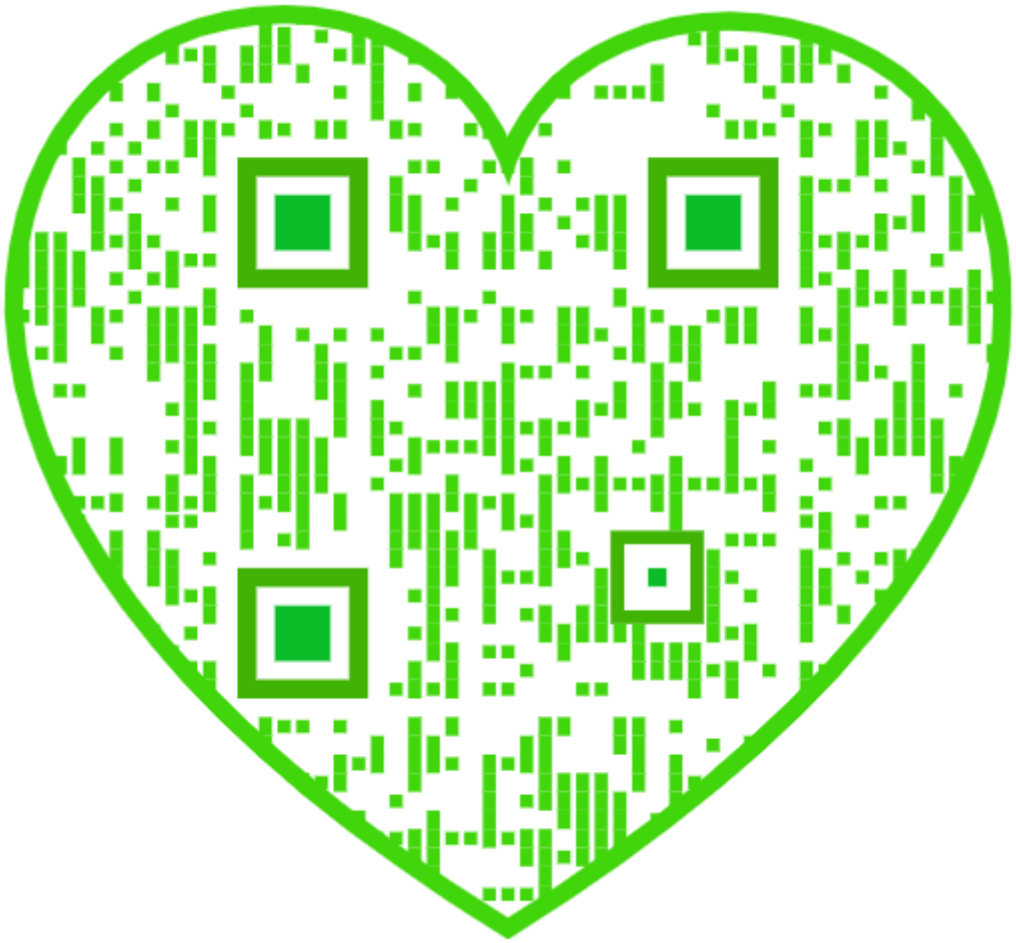

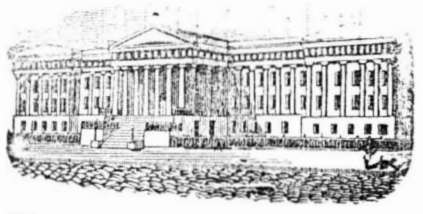

[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING MAY 12, 1856.

RIFFLE FOR GOLD WASHING.—O. G. Auld and J. S. Whiting, of Stockton, Cal.: We claim, in riffle boxes, the use of circular cavities or receptacles, constructed in the manner shown, having the neck of one diameter and the lower portion of an enlarged diameter, so as to operate in the manner specified.

LOCKS—W. H. Akins, of Berkshire, N. Y.: I claim so arranging a series of revolving slotted disks, c, upon a fixed neck or stud, D, that each in turn shall be made the means of adjusting the slot of the o her when operated upon by another disk, f, or its equivalent, secured to a revolving shaft, F, and index, G, for the purposes described.

Second, I claim altering the respective numbers of two or all the disks, c, by the simple change of an adjustable clutch from one hole to another, substantially as and for the purposes described.

Third, I claim the method described of discovering the proper numbers to open the lock, substantially as specified.

CARTRIDGE OPENER—Jesse S. Butterfield and Simon Marshall, of Philadelphia, Pa.: We claim the combination of a steady pin, thumb piece, toothed saw and spring, or their equivalents attached to the upper band of the gun, arranged and operated in the manner and for the purpose substantially as set forth.

FARM GATE—C. N. Cole, of Pleasant Valley, N. Y.: I claim the arrangement and combination of the parts forming a selt-acting or balance gate, as fully set forth.

WARDROBE TRUNKS—Wm. J. McCraken, of Rochester, N. Y.: I claim the construction and arrangement of the supporting strips, l l, in the portion of the trunk, a, for uniting the sliding portion of the wardrobe, E, to the part, a, of the trunk, as and for the purposes mentioned

PLANING MACHINE—C. B. Morse, of Rhinebeck, N.Y.: I do not limit myself to the precise mechanical devices set forth, nor to the exact combination and arrangement of the same, so long as the object is obtained without changing the principle of operation.

I claim, first, the combination of the following mechanical elements: planing cylinder, C, line plate, F, beds or rests, D E, and weighted levers, G, or their equivalents, when arranged and combined for reducing a board to an equal thickness without bending the same.

Second, making the edge, l, of the bed, D, a cutting instrument, and giving said bed, or rest, a longitudinal movement, simultaneous with the swinging back or forward of the cylinder, so that the edges of the cutters on the cylinder will preserve the same relative position with respect to the cutting edge of the bed, in all positions which the said cylinder may occupy.

Third, giving the line plate, D, a tilting motion about its own axis, to present its flat surface to the board under all circumstances, substantially as and for the purposes set forth.

Fourth, maintaining the pressure on the middle of the board, irrespective of the portion of the cutters to which the board is submitted, by means of the weighted levers, G, operating substantially as set forth.

FILE CUTTING MACHINE—James L. Norton, of Alum Bank, Pa.; I claim, first, hanging the worm wheel shaft in movable bearings, so that the worm may be disengaged from the feeding rack without stopping its motion to do so, for the purpose of allowing the carriage to run back, and be set for the next series of nicks, substantially as set forth.

I also claim, in combination with the movable shaft, the adjustable protection, m, and levers, S T, for first holding and then disengaging the shaft to admit of its swinging, substantially as set forth.

I also claim, in combination with the sliding carriage, the projection, t, and adjustable former, Y, for keeping the blank at a uniform distance from the nicking tool, for the purpose of equalizing the force of the blow, notwithstanding the taper of the blank, as set forth.

I also claim the use of the spaces, 1, 2, 3, for regulating the force of the spring upon the nicking tool, as set forth.

WATER WHEELS—G. W. Pittock, J. B. Scott, and Galen Richmond, of Troy, N. Y.: We claim the combination bucket formed by the union of two separate buckets whose lines are arranged substantially as described, so as to form a hollow box through which the water passes in operating the wheel.

We claim the mechanical arrangement and application of the gearing to the wheels and shaft within the upper section of the upper wheel, in combination with the cap which it covers, substantially as set forth.

BROOMS—T. H. Powers, of Wyocena, Wis.: The mode of securing the broom by means of the flattened cone and T follower, I do not claim.

But I claim the frame composed of links and rods which surround the broom and hold it in connection with the cone, as described.

CATTLE PUMP—T. H. Powers, of Wyocena, Wis.: I do not claim operating the platform and raising water by the weight of the cattle.

I claim the specific manner described, whereby the platform may be placed at a distance from the well, substantially as shown and set forth.

HEATING BUILDINGS BY STEAM—A. S. Pelton, of Clinton, Conn.: I claim the construction of the apparatus with annular chamber D around the fire pot, and constituting a portion of the channel from the boiler to the radiator for warming the air in the radiators previous to the generation of steam, as and for the purposes set forth.

The employment of this chamber as a mere super heater of the steam not being claimed as my invention.

R. R. SNOW PLOW—Saml. Richards, of Philadelphia, Pa.: I claim the construction of a snow clearer, of a simple rising inclined plane, A B, in combination with the curved pieces at F, so arranged that the snow shall be gradually raised at or near to the surface of the surrounding snow, and then discharged over, on the top of it, substantially as described.

Second, I claim the employment of a series of pipes or other heating apparatus in the interior of a snow clearer, for the purpose of diminishing the adhesion of the snow o the upper surface of the clearer.

MAKING BRASS KETTLES—F. J. Seymour, of Waterbury, Conn.: I claim forming brass kettles or similar articles from discs of metal by the successive operations as set forth, commencing at the bottom and smaller part of said kettle, and shaping the same at once, and then gradually forming a drawing in the sides by means of dies substantially in the manner and for the purposes specified.

CHAIRS FOR SHIPS' CABINS—Wm. Thomas, of Hingham, Mass.: I do not claim suspending or attaching the chair to a base or frame, so that it will remain stationary, while the base or frame is moved or rocked, irrespective of the peculiar manner of attaching or suspending the same.

But I claim suspending or attaching the chair, D, to the curved bar, C, which is connected to the base, A, by means of the arms, F F G, and curved bar. E, arranged substantially as shown and described, for the purpose specified.

FIRE AND ESCAPE LADDER—John Van Amringe, of Cincinnati, Ohio: I claim the combination of the ladder, 2, frame, 7, and guy chains, 23, as attached to the frame work, 17. 17, and these, in combination with the pulley, 3, and rope, 24, or their equivalents, for elevating the latter and frame, substantially for the purposes set forth.

I also claim the arrangement of the guiding shafts, 21, arranged with the two sections of the framing, 17, and the windlass, 1, and the cord connected therewith, and to one of said sections, 17, for drawing the two sections apart and together, for purposes mentioned.

OVENS—John Starrett and N. J. Wier, of Lowell, Mass. We claim, first, the distrbutor plate, D, constructed and arranged substantially as described.

Second, the combination of the distributor plate, D, the chamber, C, with its net work covering, and the exterior cases, A and B, substantially as set forth.

Third, the combination of the plates or registers, H H, with the net work covering of the chamber, C, for the purpose of varying the surface of combustion to suit the various utensils to be heated, substantially as set forth.

PREPARING DOUGH FOR MOLDING CRACKERS—F. C. Treadwell, Jr., of New York City: I claim the use of the cutters in combination with the throat, for the purpose of making a shear cut, when used in combination with the grooved rollers, substantially as described.

FURNACE FOR HEATING SOLDERING IRONS—James Wilson, of Brandywine, Del.: I claim constructing a furnace and providing it with any desirable number of cells, E E, substantially in the manner described, for the purpose of heating solder irons with anthracite or other coal, as set forth.

HORSE SHOE—N. B. Carpenter, of New York City: I do not claim any particular construction or form of a horse shoe, with a rim or flange, although the latter is in fact, inseparably connected with my invention, yet I am, aware that flanges or rims detached in part have been used heretofore in this and other countries.

Neither do I claim a heel car or round shoe, separately considered, as that too has been used heretofore.

But I claim a horse shoe having a branch bar attached to each heel bar of the shoe, extending inwardly, and at the same time lapping and fitting one to the other, with corresponding apertures through each, for the insertion of a pin or screw, for the purpose and in the manner set forth.

SURGICAL SPLINT—John Clough and D. M. Cummings of Enfield, N. H.: We claim, first, the bed composed of strips of cotton cloth, h h h, &c., or other suitable material passing through the slots, i i, &c., in the leg side pieces, A, arranged and confined as described, for the uses and purposes set forth.

Second, the foot frame and bed, composed of the oblique standards, I, the bow, P, and the strip of cloth, h h, or other suitable material, passing through the slots, i i, attached to and adjustable upon the side leg pieces, A, and for the purposes and uses described.

Third, the device for extending the leg by the employment of the lower extension screws, e e', the traversing nuts, j, and their guides, k, with their connecting straps, x, in combination with the cross bars, J and K, the leg side pieces, A, and the femur side pieces, F F, the femur splint, E, the cushions, G and H, the bolster, L, the bandages, U and O, with their connecting straps and the brass straps, V, constructed and operating in the form and manner described.

Fourth, the device for extending the thigh by the employment of the upper extension screws, r, in combination with the femur side pieces, F, by the leg side pieces, A, the femur splint, B, the cushions, G and H, the bolster, L, the bandages, U and O, with their connecting straps, and the brass straps, V, constructed and operating in the form and manner described.

Fifth, the device for flexing and extending the limb by the employment of the elevating screw and its supports, y y, in combination with the cross bar, M, the leg side pieces, A, the femur side pieces, F F, the supports, m m, and o o, the braces, t t, the elongating arbor, T, the concave flooring, N, and the bed pieces, B C and D, constructed and operating in form and manner described.

Sixth, the elongating arbor, T, constructed and operating in form and manner as described.

Seventh, the device for spreading and contracting the splint, by the employment of the elongated tenon, d, passing through corresponding mortises in the lower ends of the bed pieces, B C and D, in the double elongated tenons, j, firmly fixed in the upper ends of the bed pieces, B and D, and passing through a corresponding mortise in the upper end of the bed piece, C, and the confining pin, k k, in combination with the bed pieces, B C and D, the supports, m m and o o, the braces, t t, the elongating arbor, T, the femur side pieces, F F, the leg side pieces, A, the cross bars, J and K, constructed and operating in form and manner, as described.

CONTINUOUS SHEET METAL LAPPING SURFACE—J. B. Cornell, of New York City: I claim a continuous sheet metal lap surface formed of united strips or sections of the shape, substantially as set forth.

CUTTING GREEN CORN FROM THE COBS—Wm. B. Coates, of Philadelphia, Pa.: I claim the spindle, F, with any convenient number of prongs, e, in combination with the yielding cutters, G G, the whole being arranged and constructed substantially in the manner and for the purpose set forth.

BRIDLE BITS—B. J. Day, of Gibson Co., Ind.: I do not claim the attaching of a gum elastic strap or other elastic material, to the upper ring of the common curb and lever bit by one end, the other extending a few inches out on and attached to the rein, which itself is attached to the lower ring; nor do I claim straight, curved and spiral springs.

I claim the screw, h, the spring and folding limb, c, applied and operating substantially in the manner described, by which the common curb, and lever bit, and the noncurb and lever bit can be changed at pleasure, from one to the other.

SELF-COUNTING MEASURE—Elisha Dexter, of Holmes' Hole, Mass.: I claim supplying the point which marks the extremity of the yard or standard of measure with the pressure knob, A, and connecting it with the pointer, E, by means of the escapement lever, F, and the rack, C, as a means of pointing out the number of yards measured upon the index, as specified.

TREBLING SINGLE THREAD—Lucius Dimock, of Hebron, Conn., and Ira Dimock, of Mansfield, Conn.: We claim, first, the rock shaft, G, with a hollow conducting arm, g, operating substantially as described to conduct each strand thread from its bobbin to the hitching pin or its equivalent and to effect the enchaining of the loops.

Second, the attachment of the hitching pin or pins, h', to the arm or arms, h, of a rock shaft which is operated substantially as described, for the purpose of forming and disengaging the loops.

Third, the arrangement and combination of the rock shaft, G, having a hollow conducting arm or arms, g, the traveling carriage, F, carrying the rock shaft, G, and its vibrating hitching arms, h, the strand bobbins, B B, and the trebbled thread spools, C C, the whole operating substantially as set forth.

DRESSING MILL STONES—S. W. Draper, of South Dedham, Mass., and Reuben M. Draper, of Roxborough, Mass. In combination with the inversion of the cam, G, we claim the employment of a secondary lever, m, attached to the sliding piece, A', or arranged in any equivalent manner to cross the face of the cam on one side of the center, and transmit motion therefrom to an arm, c', on the pick shaft, whereby in all changes of the relative positions of the pick shaft and the cam, the pick is operated by the cam in such a manner as to give an uniform force to the blow, as set forth.

BOW FOR VIOLINS—S. F. French, of Franklin, Vt.: I claim the attachment of a portion, d d of the hair of the bow to a movable pin, f, or its equivalent, operating as described, to separate the said portion, d d, of the hair from the main body of hair in the bow, or to unite it therewith, at the pleasure of the player.

SELF-RAKING ATTACHMENTS TO HARVESTERS—Hugh Fousman, of Enon, O.: I claim the combination of the wheel, D, adjustable crank. E, slotted rake, F, and guides or ways, g m, for giving the rake its traversing and rising and falling motion, substantially as described.

HAT-FELTING MACHINES—A. C. Fuller, of Danbury, Conn.: I do not claim a vibrating rubber bed in combination with rollers having positive and reverse action.

But I claim the polygonal drum, B, constructed, arranged, and operated substantially in the manner and for the purposes described.

HAND SAW—Jackson Gorham, of Bairdstown, Ga.: I claim the construction of a saw so as to answer the purposes of both saw and square in one and the same instrument, substantially as described.

LOCK JOINT FOR R. R. BARS—James R. Hilliard, of Paterson, N. J.: I claim in joining the sections of rails for railroad heads the combination of the several laps, substantially such as described, and consisting of, first, the lapping each against the other, along a central longitudinal vertical plane, or nearly so: second, lapping each on to and under the other on planes parallel, or nearly so, with the longitudinal axis of the rail; and third, making the surfaces where each laps on and under the other, inclining downwards from each side of the rail towards the central longitudinal vertical plane of division of the joints, substantially as and for the purpose specified.

HUSKING THIMBLE—J. H. Gould, of Smith, O.: I claim the device shown, resembling the end of a human finger, and formed by providing a thimble, A, very similar in construction to a sewing thimble, and welding or otherwise forming an artificial finger nail, B, on the upper side of its forward extremity, substantially as and for the purpose set forth.

WINNOWING MILLS—Horace N. Goodrich, of Aurora, Ill.: I claim the arrangement of the screens, A B C D, above the ordinary screens and shoes of a common fanning mill, and furnishing a regulated blast to said series of screens, either from the main fan wheel, or any auxiliary wheel near thereto, for the purpose of comprising within one machine or frame the facilities for cleaning all kinds of grain or seeds, and separating them from each other and from the impurities mixed with them, as set forth.

PUNCHING MACHINE—Edward Heath, of Fowlersville, N. Y.: I claim placing a series of punchers, L, of varying sizes and forms in a flanched rotating cylinder, J, arranged relatively with the plunger rod, l, as shown, so that by rotating the cylinder either of the punchers may be brought in line and connected with the plunger rod, substantially as described.

PORT MONNAIES AND POCKET BOOKS—James Hewson, of Newark, N. J.: I claim the combination of the catch, b, or swivel, e, and spring, A, with the ring, d, attached to the port monnaie or pocket book frame, in the manner and for the purpose described.

MANUFACTURING WASHBOARDS—J. B. Holmes, of Cincinnati, O.: I claim the arrangement of the cams, 3 3 and 6, spring, 4, and ring, 5, for operating the incising knife or cutter, 7, as mentioned.

I also claim the arrangement of the guide piece, 12, and gauge pieces, 22 22, for purposes mentioned.

COMPOUND RAIL FOR RAILROADS—Wm. J. Holman, of Indianapolis, Ind.: I claim the extension at sundry points throughout its length or lengths by waved or irregular formations of the stem or flange, a, of the cap bar of the tripartite rail below, and through or beyond the bottom surface of the two side or chair rails, and in connection and combination therewith by key or wedge passing through the one rail only from below, as and for the purposes set forth.

SECURING KNIVES TO CUTTER HEADS—Wm. D. Hooker, of Dedham, Mass.: I do not claim operating a wedge by a screw, it having been done before.

I claim the cutter head, A, the shanks, a a, of the cutters, the wedge, D, the screw rod, E, the whole in combination, arranged substantially as described and for the purpose specified.

INVALID CHAIRS—Daniel S. James, of New Market, Va.: I claim the construction of invalid chairs of a loosely jointed frame, in combination with a brace, f, operating substantially as and for the purposes specified.

MOWING MACHINES—C. M. Lufkin, of Ackworth, N. H.: I claim the employment or use of the endless aprons, J, in connection with the rotating cutters, D D', arranged as shown for the purpose specified.

FASTENING BITS—Horace Lettington, of Norwich, N. Y.: I claim the rod or arbor, D, passing transversely through the stock or bit, A, and a portion of the socket, B, the rod or arbor having a notch, d, in one side, and the shank, b, of the notch, C, also having a notch, e, in one side, and the rod having a bolt, E, pressing against it, the parts being arranged as shown for the purpose specified.

PORTABLE CHAIRS.—Zebulon Lyford, of Lowell, Mass.: I claim my self-operating, folding, portable chair, or its mechanical equivalent, constructed, arranged and operated substantially in the manner and for the purposes set forth.

WORKING SHEET METAL—Sylvester B. Miller and Ezra W. Whitehead, of Newark, N. J.: We do not claim a rotating die or countersink for making depressions by cutting and removing the material, as the means for doing so are well known, and are for another purpose.

We claim the employment of the die, E, when constructed as described, and used in connection with the lower die, N, for extending or stretching thin metal plate by pressure and rotary motion combined.

BRICK MACHINES—Edmund Kingsland, of New York City; I claim, first, the oscillating finisher, F, provided with a pair of fixed and a pair of movable bearings, operating as described, in combination with a mold cylinder, containing flat faced molds, for the purpose of finishing the bricks with flat outer surfaces, as set forth.

Second, the employment, for varying the depth, of all the molds simultaneously to vary the thickness of the bricks of the two cones, H H, the right and left-handed screw shaft, C', and the nuts, g g, all applied to the mold cylinder shaft, and operating substantially as described, in combination with the inclined edges, e e, on the piston bars, G G.

BLOW PIPES—Oliver S. Lawson, of Crestline, O.: I claim in combination with the adjustable valve, l, in the cylinder, the adjustable, E, in the tube, D, so that a regulated blast may be had whether sharp or mild, substantially in the manner and for the purpose set forth.

GAS REGULATORS—Henry Waterman, of Hudson, N. Y.: I claim the construction of the valve of the gas regulator in the annular or ring formed with two faces or leats of different diameter, one at the outer and one at the inner periphery or edge, so as to produce greater circumferential capacity or opening for discharge of gas, with a limited area of valve relatively working in a manner and for the purpose set forth.

SEEDING MACHINES—Hosea Willard, of Vergennes, Vt.: I claim the rotating cylindrical frames or screens, J J, in combination with the inclined board or plate, K, with pivoted cleets, K', attached for the purpose of distributing the seed, and the cylinders or rollers, G G, having teeth, c, or shares, d, attached to their peripheries, substantially as described for the purpose specified.

OVENS FOR COOKING RANGES—Jacob S. Williams, of St. Louis, Mo.: I claim the employment of removable ovens provided with unconnected compartments of various sizes and forms, and arranged so that said ovens may be substituted one for another, or be inserted in different positions, for the purpose of subjecting their compartments to different intensities of heat, according to the nature of the viands to be cooked therein, substantially as described,

LOCKS—Joseph M. Lippincott, of Pittsburg, Pa.: I claim the combination of the spring bolt, l, tumblers, t t, and fence, h, constructed and arranged in the manner and for the purposes described, together with the combination therewith of the locking bolt, i, and latch bolt, p, so that the lock may be readily opened from inside without a key, and yet requiring a key to open it from the outside, substantially as set forth.

ROLLING FILE BLANKS—James N Aspinwall, (assignor to himself and Henry E. Staff,) of Newark, N. J: I claim the use of the rollers, A B, as described, for forming file blanks, when said rollers are operated and adjusted by the slide, K, cam, I, and springs, d, as set forth.

MOWING MACHINES—Jonathan F. Barrett, (assignor to Abram B. and Jonathan R. Barrett,) of North Granville, N. Y.: I make no claim to the rotary cutters nor to the gearing driving them.

But I claim the combination of guard plate, P, covering plate, m, and saw connection to pinion, whereby the driving mechanism is effectually excluded from foreign matter substantially as set forth.

CUTTER HEAD FOR LATHES—Milton Roberts, (assignor to himself and Isaac N. Felch,) of Belfast, Me.: I claim the eccentric insertion of the tenon, E, of the cutter head, B, in the mandrel, A, as represented, to produce an eccentric motion in throwing out the edge of the cutter, and performing as set forth.

FRAMES FOR TRAVELING BAGS AND MAIL POUCHES—Samuel D. Quimby, of Winchester, Mass., (assignor to Edward A. Locke, of Boston, Mass.) I claim the improved mouth frame or combination of two folding side frames, A and B, and two hinge extenders and gore closers, C, D, arranged, connected, and made to operate together, substantially in the manner and for the purpose as stated.

RE-ISSUE.

OIL GROUND TO RECEIVE PHOTOGRAPHIC COMPRESSIONS—Joel H. Tatum, of Baltimore, Md. Patent dated April 15, 1856: I claim the mode of preparing and rendering oil (or oleaginous) bodies, grounds or surfaces impressible or sensitve to the photographic art, by the temporary destruction or chemical change of the oil or oleaginous matter on the immediate surface only, by the use of spirits of wine and alkaline solution, or their equivalents, and after fixing the impressions by the use of hydro sulphate of soda and the use of dilute acid, by which last application the alkalies are neutralized, and the oil restored with the impression permanent upon the surface.

Disclaiming everything heretofore known in the production of photographic pictures upon paper or any unoiled body or surface.

DESIGNS.

PIANOFORTE LEGS—Isaac Engel, of Boston, Mass.

COOKING STOVES—Anthony J. Gallaher, of Philadelphia, Pa.

PARLOR STOVES—N. S. Vedder and Wm. L. Sanderson, of Troy, N. Y., assignors to N. S. Vedder, aforesaid.

PLATES OF COOKING STOVES—W. L. Sanderson and N. S. Vedder, (assignors to Sanders, Wolfe & Warren,) of Troy, N. Y.

OVEN AND STOVE DOORS—Joseph A. Read, (assignor to John H. Cahill,) of Philadelphia, Pa.

Recent Foreign Inventions.

Oil for Painting.—P. Gontier, of Paris, has taken out a patent for treating poppy, linseed, and other oil for mixing with paint, by adding to these oils, when slightly heated in a caldron over a fire, sulphuric acid, resin, manganese, and litharge. One pound of oil of vitriol and one pound of manganese are sufficient for ten gallons of oil, and ten pounds of resin. They must be added cautiously, and stirred well for three or four hours.

Iron Tubular Ships.—James Hodgson, of Liverpool, Eng., is now building iron screw steamships on a principle for which he has taken out a patent. These vessels are constructed without frames, side-frames, floorings, &c., in dispensing with which it was found necessary to increase the strength of the plating for the sides; but to double the strength it is not necessary to double the thickness of the plate, as the strength of the materials increases as the square of the thickness. The strength is further increased by a bulkhead being placed in the widest part of the ship, amidships, and by other bulkheads placed midway between the midship bulkhead and the bow and stern, and again by the interposition of stiffening plates, so as to spread the strain along the vessel's side from one to four feet from the bulkhead. As the sides of the ship, under ordinary circumstances, are much weakened by the holes cut for the bulkheads to be secured to, the patentee extends the butting piece, usually placed over the joint, along the line or strake of plates, and spreads the rivets over a wider area. By the construction of a ship in this manner—in fact, on the principle of a huge steam-boiler or tube, with rounded top and sides, capable of sustaining great pressure—the usual appendages, knees, angle-iron plates, and rivets, for gunwale fastenings, are entirely dispensed with.

Manufacture of Steel.—The correspondent of the London *Mining Journal* in Rhenish Prussia, expresses surprise that some of the capitalists in England do not turn their attention to puddling pig-steel, which in Prussia is making rapid strides. Puddling both iron and steel with gas is very general in Prussia. In some instances the gas is obtained from the blast furnace, but in most cases it is generated in small ovens, attached to each furnace. Dry wood, charcoal, lignite, and turf are employed as fuel. At one of the iron works where wood is used for gas the charges are 8 cwts. of white mottled iron each furnace, bringing out 20 to 21 tuns of puddled bars per week, at a loss of only 4 or 5 per cent., and with a consumption of 4 cubic feet of timber per cwt. of puddled bars. At another works they charge with 10 cwts. of gray pig, and bring out the charge in 2 1-2 hours, with 8·70 cubic feet of wood per cwt. of puddled bars. A large rolling-mill is arranged to puddle steel with gas from lignite, to be converted into railway wheels and tires, for which there is an increasing demand. These are forged under the hammer to nearly the required form, and then passed through a pair of rolls, to finish them.

The Niagara Frigate.

The coppering of this noble vessel was finished on the 12th inst., and she was taken out of the dry dock the succeeding day. During the time she was getting on her sheathing, at the Navy Yard, the *Adriatic*, belonging to the Collins line, was partly planked, launched, sheathed, had her boilers, bed plate, and other machinery put in, and will no doubt be ready for sea half a year before the *Niagara*, although the latter vessel was launched some weeks earlier. Government jobs are slowly executed.

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Notes on Ancient and Curious Inventions.—No. 7.

Removing Head Dandruff—On the 6th of April, 1842, James McKay, residing in New York City, obtained a patent for a lotion made of the following materials for removing dandruff from the head. Boil a pound of carrots until they are soft, in a quart of water, then squeeze them in this liquor to press out the juice, and add a pint of rum, a gill of sweet oil and about 50 drops of the oil of bergamot, to scent it. This is the patent lotion for removing dandruff. It has the appearance of being a very good hair wash, as we should judge from the nature of the ingredients. A solution of borax will remove dandruff, but it has a tendency to make the hair fall out.

Coloring the Hair—Augustus Grandjean of New York, obtained a patent on Feb. 28th, 1841, for a very peculiar composition for dyeing the hair of the head and the whiskers, and giving to a red moustache a splendid black appearance, equal to that on the upper lip of a Persian or Turk, we suppose. The ingredients consist of well slacked lime sifted, 4 parts (by weight) ; oxychlorate of bismuth, 8 parts, and venetian red, 1 part; these three are first well mixed together, and to them are added, gradually, eight parts of fused yellow protoxyd of lead and soft water, containing some gum arabic in solution. When these are all mixed together, by stirring for 4 hours, to the consistency of a paste; they are then allowed to rest in a suitable vessel for three or four days, after which some pulverized brick is to be added and mixed, and the whole molded into cakes, called "Grandjean's American Brick." These notorious bricks were to be applied to the hair before going to bed, and no doubt this is the reason why they have not yet become notorious for building purposes. We would not like to carry such a brick in the inside of our hat. Litharge and powder of lime mixed together and formed into a paste, will color the hair black, but it is an abominable application, and we caution our readers against its use.

Catching Ducks—In January, 1830, a patent was granted to Wm. Coffield, of Norfolk, Va., for catching ducks by the use of nets with meshes about six inches square. The nets were to be set on the surface of the water, and as the ducks arose from feeding on aquatic plants below, they were to be noosed in the meshes; or these nets were to be sunk in the water, and when the ducks dived down they run their necks into the meshes. The difficulty in [illegible]ng out this method of catching duck[illegible]isted in the fact that a duck could run [illegible]ad back or out of the mesh of a net as e[illegible] as he ran it into it.

Ink—In September, 1835, a patent was obtained by John D. Myers, of New York, for making ink into cakes. Common writing ink was deprived of its moisture by evaporation and when reduced to a proper consistency was molded into cakes, then dried. By the application of hot water to dissolve these cakes, they were made into writing fluid. They were easier carried to a distance than inks in bottles, but they never came into use.

On December 5th, 1842, Peter Ferris, of Greenwich, Conn., was granted a patent for writing ink made as follows: Boil 12 lbs. of logwood in 12 gallons of soft water for three hours, then strain through a sieve, and to the clear liquor add 10 lbs. of nut galls, 3 lbs. of copperas, 6 oz. of blue vitriol, 4 lbs. of gum arabic, 1 lb. of Prussian blue, and 1 lb. of indigo, and 1 lb. of sugar.

All these ingredients are then boiled for 5 hours, and left to stand 10 days, stirring it daily, then the clear liquor poured off, and if there be less than nine gallons of it, water is added to make it up to this quantity, and a gallon of alcohol likewise. It is stirred regularly for ten days, then bottled up for use. This is a good permanent writing and copying ink, but it is somewhat expensive to manufacture.

Gun Powder Engine—Explosive Engines are not of recent date; they have been "jack-o'-the-lanterns" to many inventors, and perhaps may be so again, but hereafter let it be known to all such inventors that no patent can be granted for inventing such an engine, as one was obtained in June 29th, 1843, by Henry Rogers, of New York, in which he not only claimed gunpowder, but any other explosive compound, especially for propelling locomotive engines to run on common roads. This engine, we suppose, never ran on a common road. Common-road locomotives have proven rather unfortunate projects.

Adhesive India Rubber Plaster—On March 26th, 1845, a patent was obtained by H. H. Day and Wm. H. Shecut, of New York, for a strengthening or adhesive plaster, for rheumatism, sprains, pains, &c. It was made by taking 5 lbs. of india rubber reduced to shreds and steeped for some time in soft water; then it was put into a vessel containing as much spirits of turpentine as would cover and dissolve it. After this it was pressed through a fine sieve. Four ounces of cayenne pepper were heated in a quart of turpentine, and a portion of it was ground with a pound of litharge; to the remnant of the pepper tincture 6 ounces of the balsam of Peru was added; a pound of pine tree gum was then melted in a pint of turpentine, and the whole of these ingredients were then mixed together. This plaster appears to be capable of putting to rout the most incorrigible rheumatism, if put upon the right spot, at the right time. The materials described are spread upon some suitable substance, which was perforated with holes and applied in the usual way.

Toothache Remedies—We cannot do better than finish up this article (No. 7) with a few powerful patented assaults against that arch enemy of peace and comfort—the toothache. Three patents have been granted for toothache remedies; the first, in 1815, to L. Merritt and L. Rodgers, of New York, for driving off the ache with steam—high pressure, we suppose. The second was granted to Thomas White of Ohio, in 1829, and the third at the same time, to Prof. Pennington, of the same State, the famous projector of carrying the mail, passengers, &c., by steam balloons. The remedy of White consisted of camphorated brandy, laudanum, oil of peppermint, camphor nitric acid, opodeldoc, venice turpentine, and tar. all mixed together and applied to the teeth. No person would be benefitted by knowing the proportions of this ridiculous toothache remedy. Prof, Pennington's specific consisted of French brandy and spirits of turpentine, in which Indian turnip was soaked. This was applied to the diseased tooth on a piece of cotton, and if it did not cure the aching of it, the tooth might be extracted in the ordinary way, we suppose, although the patentee omits this claim in his recipe.

[For the Scientific American.]

The Sperm Whale and its Food.

The full-grown male Sperm Whale is from sixty to seventy feet long, and not far from 30 feet in circumference in the largest part. The head in front is nearly square, or has the corners rounded off, and is much thinner next the lower jaw, becoming thicker towards the back, where it is almost as broad as the back, increasing a little in size up to the eyes, which are located about one-third of the whole length of the fish from the extreme end of the nose. The eyes are about twice as large as those of an ox, and have lids to shut over the ball. From this fact we may suppose it sometimes sleeps, although I never caught one so: the lid may serve to protect the eye from injury. Be this as it may, none but this species of whale, or such as breathe the atmosphere, have eyes with lids that can be shut.

From the eye, the body enlarges a little, until we come to the middle of the fish, and from here it tapers down to the tail or flukes, as whalemen call them The flukes are about ten feet across, and lie horizontal when in natural position.

There is a large hump on the lower part of the back, and several small ones near the tail. There are two small fins, one on each side, just behind and below the eye; these fins are about three feet long, and one and a half wide. I think their only use is to steer with. The upper jaw is about ifteen feet long from the socket to the extreme end or point; the lower jaw is armed with large teeth, which stand apart separately; there are from twenty to twenty-five on each side. There are no teeth on the upper jaw; instead of them, cavities are provided, into which the lower teeth fit. The tongue is small, about two and a half feet long by one wide. The throat is small, and the fish could not swallow a man: therefore it was not a sperm whale that swallowed Jonah.

When feeding and not disturbed, the fish will stay down under water from one hour to one and a quarter. It then has to come up to the surface to breathe or spout, and it will stay up from ten to fifteen minutes. In this time it will spout or breathe from fifty to sixty times. It throws out no water when it spouts, as has been represented by some. At the end of this time it "turns flukes," or pitches and dives down.

This whale feeds entirely on the "squid," or cuttle-fish, as I believe they are sometimes called. The "squid," I think, lives by suction; it has no bones in its body, strictly so called; it has a kind of bill, short and thick in form,—something like horn or turtle shell in texture and color. It has two thin ieces of skin on each side, one at each end, or nearly so, and when small can fly a short distance, on the same principle as the flying-fish or squirrel, by impetus, always rising against the wind. It has long arms or fibers that extend forward from the fore part of the body, with which it embraces and holds whatever is intended as food. They grow to a very large size, and so strong as to drown a man by embracing him. This I was told did actually happen to a native of the Sandwich Islands while I was there. I have frequently seen large pieces of squid floating on the water, perhaps killed by the sperm whale. I saw a piece once, while sailing, which I judged to be ten feet in diameter. I have taken them from the whale's stomach, whole, from two to three feet in length.

The squid is active, and when pursued by an enemy, can eject an inky fluid that will cover the water for some distance round, and thus escape sometimes from his enemy.

I have said that I supposed the squid lived by suction; this I shall prove by analogy. As before stated, the squid has no teeth, and of course cannot chew; its bill is to hold fast with. On good whale ground, if we take a piece of smooth pearl shell, it will shine brightly; let it be three or four inches long and one inch wide; to this lash three fish hooks at the lower end of the shell, back to back, so as to have the points outward; have a long line attached to the upper end of the shell, with a small sinker. On some still night lower the hooks by the line into the ocean, and as it lowers, jerk it up and down, and continue to lower it until you feel something on the hooks; thus you may at almost any time hook up squid. Seeing something bright or shiny, they immediately dart to it, and embrace it, and so will be hauled up.

Now comes the question, how does the whale catch the squid, who is nimble and on the look-out? I think it is done as follows:—The whale goes down to such depths, taught him by a law of nature, where lives the squid which was created for his subsistence. The jaw of the whale, when not disturbed, hangs down, I suppose from its great weight, and so his mouth is open. Displaying those large white glistening teeth, and sides of the jaw also white and shining, the squid no sooner sees them than he darts on to the jaw and teeth and so becomes an easy prey. If this were not so, how could the whale, large and clumsy as he is, ever find his prey? With his eye where I have described it, he would be likely to go by it and round it, or see it and lose sight of it. Does any one suppose the squid would lie still, hoping that the next time the whale came round he would be so lucky as to take and devour him? I believe not.

The female whale is much smaller than the male; when full grown she is from twenty to twenty-five feet long, and resembles the male in general appearance. She has never more than two young ones at a time, and seldom more than one. She lies on her side to suckle them, and has only two teats, situated near the lower part of the belly, a little on each side, in slits or creases that cover them. The calf puts his nose into one of those slits to suck, and so the water is excluded. The whale is warm blooded.

CHARLES F. BROWN.

Warren, R. I.

[The writer of the foregoing article is a well known sea captain, and moreover, an inventor of much ingenuity. He relates his account of the sperm whale from his own observation while among them in the Pacific Ocean. His statement, therefore, may be looked upon as correct, besides being of much interest to the reader.—ED.]

California.—Wonders of the Golden Land.

Northerly Winds.—Northerly winds are a peculiar feature of the spring and summer seasons of California, and at times have a highly injurious effect on the growing vegetation. They lower the temperature rapidly, bringing in heavy fogs on the land from the sea. From the rapid reduction which they cause in the temperature, in the course of half an hour the thermometer will often fall ten or fifteen degrees. These winds dry up the moisture of the ground with wonderful rapidity. They attenuate the air to such a degree that frosts are easily induced late into the summer months. When the traveler is caught on any one of the great plains of the country while this wind is blowing, it renders the skin very dry; the eyes, the nose, and the ears are unpleasantly affected, and in the whole system is produced a most unpleasant feeling.

A Great Artesian Well—A new Artesian well has recently been opened near San Jose, Cal. The pipe is two feet in circumference, and the water flows up through it to eight feet above the surface. It rushes up with great force, and with a noise that is heard at a mile distant on a calm evening. It sends forth a thousand gallons per minute. Artesian wells are designed to be the great fertilizers of California.

The Gold Mud Filling up the Navigable Rivers—The San Francisco *Chronicle* says:—"By rough estimate forty thousand tuns of earth are washed away from the mines every week by the rivers. It is filling up the rivers, not only by their banks, but also their main channels. It is not far ahead in the future that the steamboats which traverse the Sacramento river must of necessity be very shallow. The river is not navigable now, at low tide, by the steamers now on the line, and every year it is growing worse.

Every year the canals are increasing, drawing off more and more of the water of the rivers and carrying it through the dry diggings, where it is absorbed or evaporated without ever again reaching the rivers. Thus the strength of the currents in the rivers is lessened, and consequently the dirt swept down from the mining localities along the rivers is more readily deposited in their channels. Not only are the rivers filling up, but the harbor of Benicia is also filling up. So is our own harbor. Since the completion of Clay street wharf—some three years ago—the water at its end has shallowed eleven feet, being now but twenty-one,—then it was thirty-two feet."

Curious Lake.—The Placerville *American* (Cal.) gives an account of a peculiar lake on the east side of Bear River Valley. It is an immense pool or spring, rather than a lake, a little over one hundred yards in length along the base of the mountain, and nearly the same in width, but extending in one place under a shelving rock that nearly touches the surface of the water for many yards. That it is an immense spring issuing from the mountain, is apparent from the fact that any floating substance thrown under the shelving rock, is immediately brought outward to the opposite bank. There is no visible outlet to the waters except that the margin is little else than rock with innumerable fissures traversing it in every direction, and through which, though with no apparent current at the surface, the water undoubtedly escapes.

The surface of the rocks at the edge of the water, and for several inches above and below, is coated thick with a substance closely resembling sulphur, but without its properties, being uninflammable. Not a living fish is to be seen in its waters, but digging into and breaking up a kind of soft scoria or volcanic mud nearly hardened into stone, that makes a portion of the bank, great numbers of fish, from two to six inches in length are found embedded therein, and perfectly petrified.

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Scientific American.

NEW-YORK, MAY 24, 1856.

Highly Important to Inventors.—Proposed Remodelling of the Patent Laws.

The Bill published in other columns, designed to effect such a sweeping change in our present patent system, is the one to which we alluded last week, and it is nearly the same as that introduced into the Senate in June, 1854.

When introduced into the Senate on the 10th inst., mysterious telegraphic despatches were sent to the daily papers, lauding it to the skies, and stating it had met with the unanimous approval of high judicial personages at Washington. Those dispatches were no doubt, furnished by parties interested in its passage. We cannot believe that any good jurist acquainted with our present harmonious patent code, would endorse such a bill, either as it respects its provisions or composition. Some interested assignees of certain odious monopolies, no doubt, know something about these despatches. Defeated by bold and open opposition, they entertain hopes of accomplishing their objects in some other way.

Why is such a Bill now presented to the Senate? Neither the public nor inventors have demanded it, therefore it has the appearance of being an excrescence on patent legislation. Is it designed to be an improvement on the present patent system? Not in a single particular would it prove so; but would superimpose a bad, objectionable, system upon a good one. The object of all legislation should be improvement; but the object of this Bill appears to be the very reverse.

Our present patent system is so simple, is now so well understood by inventors and the public, and under the present able administration of Commissioner Mason has worked so admirably that, according to the dictates of our conscience, we must repel every attempt to displace it by such a Bill as this. If carried out into law it would entirely defeat the objects for which the Patent Office was mainly instituted, and convert that establishment into an extravagant and extraordinary judicial court, and a huge printing and publishing warehouse.

Patent laws should be simple and explicit; but this Bill is the very essence of complexity and crudity. The object of patent laws should be to encourage inventions, and give stability, to patents, and protection to both patentees and the public. Under the present patent laws these objects are accomplished; but the new Bill instead of being an improvement, appears to us to be framed to discourage inventors, clog their energies, confuse the business of the Patent Office, worry patentees, and render patents almost valueless. It provides that after a patent has existed but five years, it must become null, unless the patentee can and does pay a new fee of $100 into the Treasury. And then there are also so many expensive processes provided for patents to go through, such as the *confirming act*, that it appear to us to be instituted for the very purpose of sweating inventors and benefitting agents and lawyers. No inventor could ever find his way through the meandering courses his case would have to go before he got a valid patent, and attorneys could not afford to conduct cases at the expense now paid for preparing applications and obtaining patents. Is this the way to encourage mechanics and farmers, who compose the majority of our inventors, and who, in general, cannot afford to pay for such money-sweating operations? We trow not. Such provisions in a Bill appear to be an attempt, also, to force poor inventors to place their inventions under the patronage of wealthy capitalists, or lose the benefits of them (after five years) altogether, if they have been so fortunate as to raise money enough to obtain patents at all.

Hitherto our patent system has been considered the most simple and perfect in the world; it has been a model for England and some other nations, who have recently adopted some of its features. But the new Bill would drag it back to the ages of barbarism, by engrafting upon it worse features than those embraced in the Prussian or old English system.

But our object in this place is not so much to criticize the Bill as to direct the attention of our legislators and inventors to a careful examination of its contents, and to pass judgement thereon themselves.

Any great and sudden change in established law, especially that which has operated so well as our present patent code, is a dangerous expedient. All able statesmen are well aware of such dangers in legislation. The present patent laws contain so many beautiful features, and are so very simple and explicit, and so many brilliant inventions have been patented and sustained at law under them; and besides, they have been the means of exciting so much latent inventive genius, that we must warn Senators not to lay ruthless and hasty hands upon them. They are far superior in simplicity, fairness, and justness in all those provisions designed to be superseded and abrogated by the New Bill. Such great changes as those contemplated in this Bill, have not been asked for by inventors or the public: they are not required and should not be made.

A Call from Henry L. Ellsworth.

Ex-Commissioner of Patents—H. L. Ellsworth, Esq.—favored us with a call a few days since; the old gentleman looked as hale and hearty as when he presided over the Patent Office twelve or fifteen years ago. He resides at Lafayette, Ind.. and states that this year he has planted nearly 4,000 acres of corn on his *little* farm.

In conversation with him upon the subject of the New Patent Bill now before Congress, he expressed himself decidedly opposed to it, stating that he was fearful, if adopted, it would be a broad step towards the breaking up of our whole patent system. He coincided in our opinion, that the existing laws are as good as they can be, with perhaps some minor amendments, and he should be very sorry to see such a bill enacted, as was proposed. The honest old gentleman seemed not only to deprecate the idea of tampering with the present beneficial laws, but to feel sad at the idea of our Congress entertaining a bill which was so apparently concocted by designing parties, to procure the extension of a few monopolies, which they could not otherwise induce Congress to extend, unless by deception.

Like the makers of sugar-coated pills—they seek to hide the taste of the drug, while passing through the Congressional mouth, well knowing that when swallowed, the effect will be the same as if no covering existed.

New Patent Bill

TO AMEND THE SEVERAL ACTS NOW IN FORCE IN RELATION TO THE PATENT OFFICE.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Commissioner of Patents may establish rules for the taking of any affidavits or depositions which may be required in cases pending in the Patent Office, and such affidavits and depositions may be taken before any commissioner to take acknowledgments of special bail and affidavits, appointed by a court of the United States, or any person specially appointed by the Commissioner of Patents, who shall have power to issue subpœnas to compel the attendance of witnesses, which may be sent to any distance not exceeding fifty miles from the place where the witness is required to attend, who shall also be vested with power to administer oaths, to issue attachments, and to punish for contempts, so far as the same shall be necessary to compel the attendance of witnesses, or to preserve order while taking their depositions. And whenever a witness, from whom an ex-parte affidavit is desired, shall refuse or fail to give full testimony on all points suggested to him, interrogatories may be propounded to him, which, together with the answers thereto, may be reduced to writing, and used in place of an affidavit; and if any person in making an affidavit or deposition, as above contemplated, shall wilfully swear falsely, he shall be deemed guilty of perjury, and be punishable accordingly.

[At present there is no law compelling the attendance of witnesses or requiring them to testify. It is undoubtedly proper that some method of employing legal coercion, when required, should be introduced. But we object to giving the Commissioner of Patents, or any of his appointees, such extensive judicial authority as the above section provides. It states that any person appointed by the Commissioner, shall have power to issue subpœnas and compel the attendance of witnesses; said person shall also have power to administer oaths, *issue attachments and punish for contempts*. The witness is thus liable to indefinite imprisonment, perhaps without real cause, at the nod of the Commissioner's agent! Such authority is at present only allowed to the learned Judges of our Courts, by whom, even, it is sometimes abused. This power should never be indiscriminately conferred.]

SEC. 2. *And be it further enacted*, That no money deposited after the passage of this act shall be withdrawn or refunded on the failure of an application; but when money has been paid into the office by mistake, or when, for any other reason, money shall have found its way into the office, which in justice and equity ought not to be retained, it shall be the duty of the Commissioner to order the same to be refunded, for which order he shall place his reasons on record.

[The law now provides for the return of $20 to the inventor, in case his application is rejected, and money paid in by mistake is always refunded. This section repeals the right of withdrawal, but effects no other object.]

SEC. 3. *And be it further enacted*, That the right to file a caveat, or to apply for any patent, design, or re-issue, shall be enjoyed equally by citizens and aliens; and the fee required of aliens shall be the same as required of citizens of the United States: *Provided*, That no patent shall be issued to the citizens or subjects of any country in any territory of which citizens of the United States are not permitted by law to receive patents for their inventions: *And provided, further*, That the three months notice given to any caveator, in pursuance of the requirements of the 12th section of the act of July 4th, 1836, shall be reckoned from the day on which such notice is deposited in the post-office at Washington: *And provided, further*, That the law requiring applications for additional improvements is hereby repealed.

[The above is about the only improvement contained in the whole Bill, but we take exception to the second clause, as being an inexpedient measure.]

SEC. 4. *And be it further enacted*, That instead of the oath heretofore required of the applicant for a patent or design, he shall only be required to swear or affirm that what he has described and claimed in his specification has not been invented or discovered by any other person in this country, or been patented or described in any printed publication in this or any foreign country prior to the invention or discovery by himself, (or "prior to the date of his application," if he chooses to state it in that manner.) As against an applicant who fails to make oath that he verily believes himself the original or first inventor of that for which he seeks a patent, the foreign inventor shall be allowed to show priority of invention, and to obtain a patent accordingly: *Provided*, he shall make application within two years from this date, or within two years from the date of his invention. *And be it further provided*, That no patent for an invention, to any other than to the person who makes oath that he verily believes himself to be the first and true inventor of the thing specified in the application, shall be granted for a longer term than seven years.

[Instead of stimulating our citizens to originate and study out new inventions, the above section encourages Americans to steal improvements from foreign inventors. This is fostering home genius with a vengeance!]

SEC. 5. *And be it further enacted*, That when an interference has been decided in favor of one of the parties thereto, a patent shall be granted accordingly, (unless the successful party shall have a patent previous to the interference,) and the filing of a new application, subsequently to the day of hearing, on the interference shall not prevent the patent from being granted.

SEC. 6. *And be it further enacted*, That from and after the passage of this act, every patent, except such as by this act are limited to seven years, shall be granted for five years. Upon the application of any patentee or assignee of a patent for the extension of a patent so granted, previous to its expiration, and on payment of one hundred dollars to the credit of the Patent Fund, the Commissioner of Patents shall extend such patent for a term of fifteen years, which extended term shall be subject, however, to the conditions and restrictions for the confirmation of such patent, and the proceedings for annulling such patent hereinafter provided in this act. And all patentees and assignees of patents which are now in force, may, after the lapse of five years from the date of the letters patent, avail themselves of the provisions of this act: *Provided*, That the term for which such patents may be extended shall not exceed the term of twenty years from the date of issue of the original letters patent; and in no case shall any such patent be renewed or extended after the expiration of said twenty years. *And provided, further*, That no patent granted under the third section of this act for an invention not original with the patentee, or for a design, nor any registry patent, shall be extended for a second term.

[Under the present law the inventor pays $30 and receives a patent for 14 years, at the end of which time, by paying $40 more, he may have it extended for 7 years longer, making 21 years; the applicant for such extension is obliged to show, however, that he has made proper efforts to sell and introduce his invention, and that he has failed to receive a sufficient remuneration for the invention during the first period of the patent.

The law also provides that the said seven years extension shall be for the sole benefit of the inventor, and thus cuts off the assignees of the first patent. If the inventor was deceived or so short sighted as to sell his first patent for too small a sum, the law gives him a fair chance to redeem himself—to obtain some remuneration, at least for his invention. The proposed alteration cuts off the *inventor* from the benefits of such extension, and transfers them to the rich *assignee*. It provides that the *assignee* of any *existing patent*, and of any patent hereafter granted, may have the same extended to 20 years from its date, on application, and the payment of $100! What an outrageous provision this is! It deprives every inventor who has assigned a patent during the last 14 years, from the right of obtaining an extension, but gives that right to the *assignee*. Nearly eleven thousand five hundred patents have been granted during the period just mentioned, embracing many inventions of untold value and extraordinary ingenuity. It is fair to estimate that one-half of these patents have been assigned, and thus, at one fell swoop, nearly *six thousand inventors* are to be robbed of their right of extension, and it is to be given to patent pedlars and *assignees!* The passage of such an enactment would be a public villainy. We are informed, and have good reasons to believe, that it is a scheme concocted by the *assignees* of certain valuable patent rights to obtain the direct extension of monopolies that can be perpetuated in no other way.]

SEC. 7. *And be it further enacted*, That a patent shall not be subject to a writ of attachment or any process of law or equity issued on any judgment or decree for debt, but shall inure to the benefit solely of the patentee, his heirs, devisees, or distributees. Nothing contained in this section shall be so construed as to affect any process of law or equity as against the products of an invention, a machine constructed under a patent, or the avails of a patented invention.

[This is a foolish and unjust provision. It is an encouragement to dishonesty. One [illegible] permits a man to hold patents worth, say, a hundred thousand dollars, and leave his cr[illegible], with their families, to starve.]

SEC. 8. *And be it further enacted*, That the Commissioner of Patents is authorized to restore to their respective applicants, or otherwise dispose of, such of the models belonging to rejected applications as he shall think necessary to be preserved. The same authority is also given in relation to all models accompanying applications for designs. He is further authorized to dispense in future with models of designs, where the design can be sufficiently represented by a drawing. He may also substitute, or require the substitution of, smaller models for any that may now be or may hereafter be deposited in the office, which are larger than can be received or retained with due regard to the convenience of the office.

SEC. 9. *And be it further enacted*, That the limit now fixed to the number of agents who may be authorized to forward models to the Patent Office is hereby removed, and the Commissioner may appoint as many as he may find expedient; and so much of the tenth section of the act approved the 3d of March, 1837, as authorizes the transportation of models to the Patent Office to be chargeable to the Patent Fund, is hereby repealed. The Commissioner of Patents is hereby authorized to employ a clerk to frank such letters and documents as are permitted by law.

[Is each one of the unlimited number of agents to be appointed by the Commissioner entitled to receive a salary? If so, how much? Or are these agents to render their services *gratis* to the government?]

SEC. 10. *And be it further enacted*, That the Commissioner may require all papers filed in the Patent Office to be correctly, legibly, and briefly written; and for gross misconduct or wilful violation of the rules of the office he may refuse to recognize any person as a patent agent, either generally or in any particular case, but the reasons of the Commissioner for such refusal shall be duly recorded.

[Under the workings of this section, sup-

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pose the Commissioner of Patents conceives a dislike to any agent doing business with the Department, and refuses to recognize him, and enters his objections upon record,—what remedy has the agent to recover his dispossessed rights? Is he to be forever stricken from the rolls of the Office? Surely here is law unseasoned with the slightest mixture of justice for the offender.]

SEC. 11. *And be it further enacted*, That from and after the passage of this act, the right of appeal to the chief justice, or to either of the associate justices of the Circuit Court, shall cease, except as to cases which then have been finally acted upon by the Commissioner of Patents, and to which the right of such appeal shall then be complete.

There shall be appointed, in the same manner as is now provided for the appointment of examiners, an examiner-in-chief, with a salary of three thousand dollars per annum, payable out of the Patent Fund; who in all cases during the necessary absence of the Commissioner, or when the said principal office shall become vacant, shall have the charge and custody of the seal, and of the records, books, papers, machines, models, and all other things belonging to said office, and shall perform the duties of Commissioner during such vacancy; and whose duty it shall be to entertain appeals from the final action of the examiners in the manner which shall be prescribed by the Commissioner. And from his decision an appeal may be taken to the Commissioner in person upon the payment of the sum prescribed in the following section of this act.

[This is the politicians section. Its object, we suppose, is to render the Commissioner's office a *sinecure*—a fat berth for some good-for-nothing political hack. It relieves the Commissioners from all active duties and thrusts them up a subordinate officer.]

SEC. 12. *And be it further enacted*, That so much of the laws now in force as fix the rates of the Patent Office fees are hereby repealed, and in their stead the following rates are established:

On filing each caveat, ten dollars.

On filing each specification, with not more than three claims, twenty dollars.

For each additional claim more than three, ten dollars.

On issuing each patent, with not more than three claims, ten dollars.

For each additional claim more than three, ten dollars.

On appeal from Assistant Commissioner to Commissioner, ten dollars.

[There is no such office as "Assistant Commissioner" provided for in this Bill. According to the letter of the law, it should be "Examiner in Chief."]

And when the number of words in any patent shall exceed one thousand, there shall be paid (in addition to the regular fees above prescribed) the sum of twenty-five cents for each one hundred words.

On application for a patent for a design or for a registry patent or for the re-issue of a patent, ten dollars.

On every application for an interference with a patent, or any previous pending application, ten dollars.

On every appeal from the Commissioner, twenty-five dollars.

On filing each disclaimer, ten dollars.

For copying, per hundred words, fifteen cents.

For recording every assignment, agreement, power of attorney, &c., of three hundred words or under, one dollar.

For recording every assignment, &c., over three hundred and under one thousand words, two dollars.

For recording every assignment, if over one thousand words, three dollars.

For copies of drawings, not herein directed to be engraved and printed, the reasonable expense of making the same.

[The existing law exacts $10 from every man who goes so far as to apply or *pray*, or petition for a patent, the specification of which contains six claims—in other words the government charges $10 *for signifying its refusal to give* a patent. This is dear enough in all conscience; but it is proposed, above, to charge $70 for the same service—which is an increase in the fees of seven hundred per cent! Marvellous improvement, that!

The fee now charged, if the patent is granted (and the specification contains six claims,) is $30, and the patent runs for 14 years. If the foregoing rates are established, the expense for a similar patent will be $210, being an increase again of seven hundred per cent!

But even at this great cost, the patent is not to be regarded as really valid. It must now go throught the trick of "*confirmation*," as provided in the following section, for which a further extortion of $100, is to be exacted by the government, making a total of $310 for official fees—being more than ten times the present rates. To these must be added the private costs of the inventor for employing lawyers to conduct and obtain the "confirmation," examining witnesses, procuring their attendance, and paying their travelling fees. These expenses will swallow up $1000 or $2000! Very encouraging, that, for inventors! Exceedingly fostering to genius!

This system of taxing for extra claims, and for an extra number of words in specifications, etc., is the most ridiculous mess of nonsense that we have met with lately. Should it become a law, the Office will not only be turned into the Dutch grocery system of dealing in half-pennies, but it will entail upon it more annoyance and confusion than Job-like patience could ever endure. If the patent fee is too low, increase it, but do not, for mercy's sake, lumber the office with vexations that must certainly attend this attempt at reform.]

SEC. 13. *And be it further enacted*, That upon filing a proper petition and payment of one hundred dollars by any patentee or assignee of a patent, the Commissioner of Patents shall cause notices to be published in like manner as heretofore required in cases of applications for extensions of patents. Every notice of this kind shall state that application has been made by the petitioner to have his patent confirmed, and shall notify all persons opposed to such confirmation that they may appear by a certain day therein fixed, not less than six months from the date of such notice, and make objection thereto. Such objection may be made in like manner as heretofore prescribed in cases of applications for extensions. If no sufficient objection is made or appears, the patent shall be confirmed, and a certificate of such confirmation shall be endorsed thereon; and after such confirmation the patent shall not be liable to be called in question, except by a direct proceeding as hereinafter provided. In prosecutions for infringement after such confirmation the defendant shall not be permitted to show in defence that the patent was invalid. But in cases where justice and equity require delay of such prosecution until a suit to set aside a patent can be determined, the court before which the prosecution for infringement shall be pending shall have power to grant a stay of proceedings for that purpose. And in no case shall a patent be held invalid for the reason that the subject matter thereof was described in a book printed in any other than the English language prior to its invention by the patentee, unless so described as having been patented in some foreign country. Nor shall a description thereof found in any book printed in the English language more than five years prior to the date of any patent affect the validity thereof, unless the thing patented was in public use in this country prior to the date of the invention for which the patent in question was granted. These rules shall also govern the Commissioner of Patents in acting upon questions of patentability pending before him in the Patent Office.

[The existing law requires the question of the validity of a patent to be submitted to the careful deliberation of a judge and jury, belonging to our higher courts. The decision of patent cases is regarded both here and in Great Britain, as among the most important and delicate duties that devolve upon the Judicial authorities.

The above section proposes to remove such decisions from the courts, at one snap, and place them, in effect, in the hands of a single man—the Commissioner. He may be competent, or an imbecile—honest, or bribed! Patents are to be valid or invalid, just as he takes a notion! If a few more sweeping changes of this sort were to be enacted, for other legal branches, our judges and juries would soon become obsolete; their occupation would be gone.]

SEC. 14. *And be it further enacted*, That within one year from the date of such confirmation a direct proceeding may be instituted to set aside the patent in the manner hereinafter provided; after the end of which time the patent shall not be avoided except for fraud, or for other causes which would enable a court of equity to set aside the judgment or decree of a court of law or equity. And no proceedings impeaching any patent for fraud or other defect shall be allowed after two years from the discovery of such fraud or other defect.

SEC. 15. *And be it further enacted*, That within one year from the date of the confirmation of any patent as above contemplated, or at any time during the life of any other patent not so confirmed, any person may file a bill of equity in any of the circuit courts of the United States where the patentee or his assignee resides, to annul such patent. The plaintiff in such suit shall notify the Commissioner of Patents of the commencement of such suit, and shall pay into the Patent Office the sum of fifty dollars, and thereupon the Commissioner shall cause notice to be published in like manner as heretofore prescribed in cases of applications for confirmation of patents.

Any person may make himself a party to such suit as plaintiff, and any person interested in sustaining such patent may make himself defendant, by notifying the clerk of the court of that fact, after which he shall be entitled to be treated as a party in all respects; but the court may make and enforce such orders and regulations as will prevent delays by reason of the death of any party, or for any other cause; and may make rules for taking depositions as well as in regard to all other points of practice and procedure not otherwise regulated by law; and if upon the trial of the cause the court shall be satisfied that any person who is a plaintiff in such proceeding is acting in collusion with any person interested in the letters patent, the court may in its decree order that the cause be dismissed, without prejudice to the right of any other person to file a subsequent bill to repeal the same letters patent.

SEC. 16, *And be it further enacted*, That the mode of serving the defendant with process may also be fixed by the court, and if the defendant cannot with proper diligence be found in the United States, the notice published by the Commissioner of Patents, as aforesaid, shall be deemed a sufficient service; and if the defendant, when served with process in either of the modes above contemplated, shall fail to appear, default may be entered against him, and a decree rendered accordingly. The party filing the bill shall be liable, in the first instance, for all his costs of suit, but these may be collected by him from the defendant, if successful; and the court may make such order in respect to other costs as justice and equity may require. Any case of this kind may be taken to the Supreme Court of the United States by either party, on appeal, at any time within one year from the final decision in the circuit court, in such manner as the Supreme or circuit court shall prescribe. If the decision in the circuit court is not appealed from, as above provided, it shall be final; and such decision, or the decision of the Supreme Court, annulling or confirming such patent, shall be forever conclusive as to the validity of the patent.

[The present laws for testing the validity of patents in our courts are plain, simple, and, in general, highly effective. Under their operation every patent that is really valid is fully sustained; on the other hand, invalid patents are effectually silenced, though not utterly destroyed or annulled.

Let us take an example:—The holder of a patent sues some person in New York for infringement. The Judge and jury decide that the patent is invalid, for the reason that the thing patented was old—that the patentee was not the true inventor, &c.; therefore the defendant is not liable for any damages, and none are awarded. Such decision only affects that particular trial, and does not annul the patent. The holder has the right to go into Pennsylvania and bring suit against some other individual for infringement. The result, of course, will be the same; and so with every subsequent suit. By no lapse of time does an invalid or a fraudulent patent become an honest one.

The existing law, although it affords the citizen ample opportunity for defence against an invalid patent, does not permit the citizen to bring separate action, or employ the *Scire Facias* against the patent, for the purpose of annulling it. In this respect the law is thought by some persons, to be defective.

Sections 14, 15, and 16, above, are intended to permit any person, on payment of $50 to the government, to attack a patent at his own expense; and if invalidity can be proved, cause the grant to be annulled. In this respect it is an imperfect approach to the "Scire Facias." But the evils entailed by the above provisions are far greater than that which they remove, for they render invalid patents valid, by the lapse of one year's time, and destroy the criminality of a fraud after the expiration of two years! Far preferable is the present simple law to any such hood-winking legislation.]

SEC. 17. *And be it further enacted*, That the salary of the Commissioner of Patents shall be the sum of five thousand dollars per annum, and the salary of the chief clerk shall be the same as that of a principal examiner.

[The Commissioner's salary is at present $3,000. The proposed increase of the Chief Clerk's salary would give the latter $2,500.]

SEC. 18. *And be it further enacted*, That the Commissioner of Patents be, and he is hereby, authorized to contract, for a term not exceeding four years, for a sufficient number of copies of the descriptions, specifications, and accompanying drawings of the current patents, as they are ordered to issue, as will supply the office for all purpose of reference, and for certified copies which are now by law furnished by the Patent Office and for distribution, not exceeding four thousand copies of each patent: *Provided*, the entire cost thereof shall not exceed ten cents per copy.

[The number of patents granted this year will be not far from 2,500. The above law proposes to authorize the Commissioner to disburse $400 for printing each patent, or *one million dollars* a year! Under the existing law the Commissioner publishes annually a neat, compact volume, containing a brief description of the salient points of all new inventions, with a small engraving of each. The total expense is only a few thousand dollars, and it generally answers all the wants of the inventors or the public.]

SEC. 19. *And be it further enacted*, That the Commissioner of Patents shall distribute to each and every circuit court of the United States a copy of his annual report, on which the seal of the Patent Office shall be impressed, and in the absence of certified copies of the claims, specifications, and drawings of, and patent, such annual report containing the claims and drawings of such patent, which shall be held to be competent evidence of the subject-matter of said letters patent in all cases in which the original letters patent could be evidence; and certified copies of any printed patent shall be furnished to any applicant therefor, at the rate of fifty cents per copy, and have the same effect in law as written copies, as provided in the fourth section of the act entitled "An act to promote the progress of the useful arts, and to repeal all acts and parts of acts heretofore made for that purpose," approved fourth July, 1836.

SEC. 20. *And be it further enacted*, That all copies of the records or other papers of the office, shall be executed in the Patent Office, under the direction and supervision of the Commissioner of Patents, and no official original paper shall be taken from the office for that purpose.

SEC. 21. *And be it further enacted*, That any person who may have contrived and constructed any form for a casting which will require a new mold, matrix, or pattern, or any form for an article of manufacture or commodity, which may itself be used as such matrix, mold, or pattern for a casting, or which may in any other manner be copied from in such a way that the copyist can derive a direct and evident advantage from the labor, skill, or ingenuity of the maker or contriver, may, by having the same registered in the manner hereinafter provided, obtain a registry patent therefor. Application for such patent must be made to the Commissioner in the usual way. The oath must state that the applicant himself, or by his agent, did devise and construct the article or commodity which is the subject of the patent he is seeking; and all the other regulations and provisions which now apply to the obtaining or protection of patents for inventions shall apply to applications under this section, as far as in their nature they may be deemed applicable, and so far as they are not inconsistent with the provisions of this act.

[This is very obscure. Does it mean that any person can patent a common cog wheel pattern, or a candle mold, and prevent any one from thereafter making them? or is it intended to patent any *new form* of any article?]

SEC. 22. *And be it further enacted*, That no suit shall be brought for the infringement of any registry patent, unless the word "registered," with the date of such registry, be conspicuously cast upon or attached to the article so registered, and all copies thereof made by the patentee or his assignee. And no person shall be held to have infringed such patent unless he shall have used the article registered as a mold, matrix, or pattern, by means of which to manufacture a like article, or unless in some other way he shall have derived a sensible advantage to himself by copying from the article so registered or some portion thereof. And any person who shall attach the word "registered" to any article for which a registry patent shall not have been granted, shall be subject to the same penalty as in the case of any other patent.

SEC. 23. *And be it further enacted*, That the fifth and sixth sections of the act approved August 29th, 1842, entitled "An act in addition to an act to promote the progress of the useful arts and to repeal all acts and parts of acts heretofore made for that purpose," are hereby so amended that the penalties therein provided shall not exceed one hundred dollars, nor be less than five dollars for each offence; nor shall the aggregate amount of such penalties incurred in any one year exceed the sum of two thousand dollars; nor shall any action to recover any such penalty be maintainable unless brought within two years from the time when the cause of action first occurred; and that this amendment shall be applied to all penalties heretofore incurred, as well as to those which may hereafter be incurred.

[The existing law fixes a penalty of not less than $100 for each offence, as above, does not leave the fine to a jury, nor qualify the aggre-

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gate amount, or time of action. In short it punishes the offender fully, for each offence whenever it can catch him. The jury have nothing to do with the penalty, but only to say "guilty," or "not guilty." The *improvement* which is proposed, reduces the fine to $5, gives the offender the choice of clearing his skirts for the sum of $2,000 cash, no matter how many times he has violated the law, or lets him off scot-free if he can manage to keep the subject hushed up for twenty-four months.

SEC. 24. *And be it further enacted*, That the Commissioner of Patents is hereby authorized to cause the drawings of all patents issued during the present and each succeeding year, or so much thereof as will show the exact point of invention in each case, to be suitably engraved, so that plates thereof may be prepared in season to accompany his annual report for the year on which such patent was issued: *Provided*, Such engraved plates shall not exceed in cost the sum of five dollars for each drawing so engraved, the expense to be paid out of the patent fund.

SEC. 25. *And be it further enacted*, That the circuit courts of the United States, in their respective districts, shall have jurisdiction in equity upon the application of any party holding letters patent of the United States for any new and useful art, machine, manufacture or composition of matter, or any assignee or licensee of any interest therein, to issue injunctions, both temporary and final, to restrain and prevent the importation and sale of any article or articles the product of the same or substantially the same art, machine, manufacture or process of compounding matter, made in any foreign territory adjoining or near to the United States, in which the citizens of the United States are not permitted to obtain patents on as favorable terms and conditions as citizens of such foreign territory, and introduced into the United States for the purpose of traffic: *Provided*, That before any such injunction shall be granted the complainant shall establish by evidence satisfactory to the court that such article or articles was or were made by an art, machine, or process of manufacture or of compounding matter, which, if used or exercised within the United States, would be in contemplation of law an infringement of the letters patent under which he claims. And upon a proper bill filed for the purpose aforesaid, the said courts shall proceed in all respects according to the rules and principles which govern the said courts in granting injunctions to restrain and prevent infringements of letters patent in other cases, and may appoint receivers to take possession of any articles manufactured as aforesaid, and shall grant appeals from all final decrees rendered therein, in like manner as appeals are now required by law to be granted in other suits in equity to restrain and prevent infringements of letters patent.

SEC. 26. *And be it further enacted*, That if, upon the final hearing of any bill filed as aforesaid, it shall appear to the satisfaction of the court that the respondent, or any receiver appointed under the foregoing section, has in his or her possession any article or articles, for purposes of traffic, which, upon the principles of the foregoing provision, are liable to an injunction, the court in its final decree shall adjudge the same to be forfeited to the use of the complainant.

SEC. 27. *And be it further enacted*, That in all suits in equity hereafter brought to restrain and prevent the infringement of letters patent, whether under this or any former act, it shall be competent to the court having jurisdiction of the cause to inquire into the damages sustained by the complainant, either by a reference to a master, or by directing an issue to a jury, as the circumstances of the case may require, and to award the same to the complainant in the final decree, and therein to treble the amount of such damages so ascertained in like manner as the courts are now authorized to treble the amount of damages found by a jury in actions at law. And the court shall have like jurisdiction in equity to inquire into and decree the damages sustained by the complainant in consequence of a past infringement where letters patent have expired, as in cases where the bill seeks for an injunction to restrain the infringement of letters patent which have not expired: *Provided*, That in no suit hereafter commenced, upon a patent which has not been confirmed under this act, and where the right of the patentee, as the original inventor or introducer, shall be derived by answer or affidavit, specifically naming the person who is the true inventor, and distinctly describing the time and place where said true inventor made his invention, or where and by whom the same was publicly used, so that perjury may be assigned upon such affidavit, or answer, if it be not true that the invention was made before the time when the patentee proves that equity grant an injunction to restrain the infringement of a patent unless the patentee or his assign shall have established the validity of said patent by the verdict of a jury, or undertake to do so under the direction of the court. And if in any case an injunction shall be allowed, and the validity of the patent shall not be established by such verdict, the injunction shall be dissolved and the bill dismissed.

[The whole meaning of the *hodge-podge*, in the preceding clause, is, that where an injunction has been obtained in a suit for infringement, the injunction shall be dissolved, if the validity of the patent be not established. As a specimen of English composition, the section is a disgrace to the veriest school-boy that ever scribbled with ink.]

SEC. 28. *And be it further enacted*, That no person who is the actual inventor of any patentable subject, and who is the first to perfect and make that invention public, or who is the first to apply for a patent therefor, shall be defeated in his endeavors to obtain a patent, or to enjoy the benefits thereof, by reason of a previous invention of the same thing by another person, unless such previous inventor had used due diligence in perfecting his invention, and when so perfected had, without unreasonable delay, applied for a patent therefor, or brought the invention into public use.

[This is indefinite. What is unreasonable delay in the subject of inventions? Some inventors think more slowly than others. One man requires, by nature, five years to perfect an invention; while another individual, of greater mental activity, finishes the same thing in five weeks. Does this section propose to cut off the "five year" inventor in favor of the "five week" man?]

SEC. 29. *And be it further enacted*, That all acts and parts of acts heretofore passed, which are inconsistent with the provisions of this act be, and the same are hereby, repealed.

The New Patent Bill.

When we went to press last week, the introduction of this Bill had just been announced by Telegraph, and in such terms as to lead us to believe that its prime object was to extend the Woodworth Patent. Having examined the Bill, we conclude that such, on its face, is not the fact. It is gotten up by the *assignees* of certain other expiring monopolies; but we presume that the planing schemers are in for it, hand-and-glove. Birds of a feather flock together.

Recent American Patents.

Seed Sower.—By Hosea Willard, of Vergennes, Vt.—Consists in the peculiar devices employed for distributing the seed, whereby the grain is scattered evenly and equally, whether the machine is used on side hills, uneven, or rough ground. A new mode of covering the seed also forms part of the invention. Drawings would be required to convey an idea of the construction.

Rolling File Blanks.—By James N. Aspinwall, of Newark, N. J.—The metal out of which files are made is first fashioned into the proper shape by means of rollers, and then cut off into suitable lengths. These are called blanks. They are peculiar in form, being thinner on their edges than in the middle; their ends also taper down somewhat from the center. The present improvement consists in a novel arrangement of the forming rollers, whereby they are made to rise and fall at the proper moment, so as to bevel and taper the metal. We are informed that this invention expedites the process considerably, and also improves the character of the work produced.

Hat Felting Machine.—By A. C. Fuller, of Danbury, Ct.—Consists of a rotating polygonal drum, placed within a cylindrical elastic shell, in combination with a series of rollers. The hat bodies are introduced between the edges of the polygonal cylinders, rollers, and elastic cover, and the operation is such as to felt up or thicken the material in a superior and expeditious manner.

Wardrobe Trunk.—By J. McCracken, of Rochester, N. Y.—Consists in combining with a trunk the ornamental piece of furniture known as a wardrobe. Everything is attached complete, to wit, doors with looking-glasses, drawers, closet room, &c. When set up for use it looks like a substantial piece of mahogany cabinet work, genteel enough for a princess; but, in the twinkling of an eye, it may be folded up into the form of a trunk, and is then ready for transportation; the trunk, which is of an ordinary size, constitutes the base of the contrivance.

If genius continues to progress, the time will come when families emigrating West will be able to carry houses with them, furnished complete, from kitchen to parlor, all within the compass of a flour barrel. Already has a stove been invented (illustrated in our last,) which uses lime instead of fire. Though hardly bigger than a man's hat, it will cook a domestic dinner at a moment's notice.

Improvement in Iron Hubs for Wagons.—By Henry Nycum, of Uniontown, Pa.—This improvement is of such a nature that any one of the spokes, or the whole of them, may be taken out, changed, or replaced, without disturbing the other portions of the wheel. Where a wooden hub is used, if a spoke happens to become broken, it is necessary to cut the tire of the wheel, and separate the fellies, in order to get at the damaged part. The wheel must be then re-composed, the tire re-welded and reset. All this involves a considerable expense and loss of time.

Fig. 1

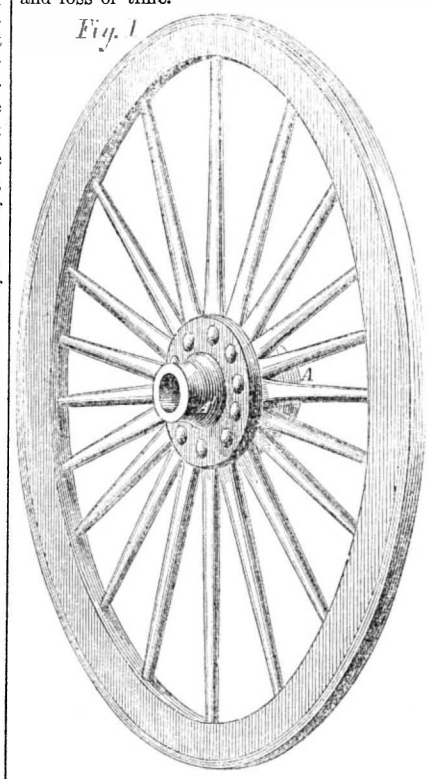
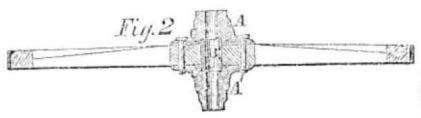


Fig. 2



In the present improvement the inner ends of the spokes are secured in an iron hub which consists mainly of two shells fastened together with screws; by simply turning the screws and taking off one of the shells, any of the spokes may be removed or changed, and the hub again put together, leaving the wheel as solid and firm as ever, all within the space of a few minutes.

The special novelty contained in the invention shown by our engraving, consists in placing a separate tube or sleeve in the center of the hub; the inner ends of the spokes rest against this tube, and are firmly supported Fig. 2 is a cross section of the wheel. A A are the shell parts of the hub, fastened together with screw bolts, as seen. B is the central tube just mentioned; it is made very thin, so as not to diminish the length of the spokes within the hub. B is made larger than the bore of the hub, and thus forms an oil chamber. C C are washers. The spokes are put in at the back of the wheel.

This method of constructing iron hubs gives them unusual strength and lightness, besides obviating several other objections that have heretofore attended their use; the cost of manufacture is also reduced. Address the inventor for further information. Patented March 11, 1856.

Brace Bit Fastener.—By Horace Lettington, of Norwich, N. Y.—Consists of a thumb button fitted into the stock of the brace, so that when a bit is placed in the stock, and the button turned, the fastening is complete.

This is a simple but very useful contrivance.

Improvement in Hat Felting Machines.—By James S. Taylor, Danbury, Conn.—In this improvement there is a large cylinder, having on its periphery a series of rollers, and over these is placed an elastic cover or jacket. The large cylinder rotates in one direction and the rollers in another. The hat bodies are carried around and felted by rubbing between the rollers and the jacket, and are discharged at the mouth of the machine, where they are put in.

The machine is adapted especially for felting the finer quality of fur hats, for it gives a light easy motion to the felts, and works them in hot water. We are informed that two men can do three times more work with one of these machines than they can by hand.

Improved Punching Machine.—By Edward Heath, of Fowlersville, N. Y.—The punching is done in the usual manner, by a plunger moving up and down. The improvement consists in placing a tool holder between the plunger and the metal to be punched; the punches are contained in the tool holder, and the arrangement is such that when the plunger comes down it will strike the head of one of the punches, and force it through the metal. The tool holder rotates upon an axis, and is divided into a series of chambers, in each of which is a punch fixed in an upright position, ready for use. When a different tool is required it is only necessary to revolve the holder and bring the head of the desired punch beneath the plunger. This is an ingenious invention.

Cabin Chair for Preventing Sea Sickness.—By Wm. Thomas, of Hingham, Mass.—Consists in hanging the chair in swivel bearings, so that the seat will always remain level without changing position, no matter how much the vessel rolls. It is alleged that the occupant will be thus relieved from sea sickness; if this is so it presents a fine example of the triumph of mechanical genius over medicine The improvement is also applicable to beds and settees.

Machine for Dressing Mill Stones.—By S W. and R M. Draper.—This invention for which a patent was last week granted, was fully illustrated and described in No. 24 of our present volume.

Mowing Machine.—By C. M. Lufkin, of Ackworth, N. H.—This improvement relates chiefly to the cutters, which are round in form, like the circular saw; they are arranged in pairs, one above the other; each pair is placed so as to form a sort of bay, like an open pair of shears. Stationary fingers are used, which direct the grass in against the cutters; the latter revolve, and thus clip the grass. Endless belts are employed to convey the grass over and out of the way of the knives, thus preventing any choking.

Improved Violin Bow.—By Samuel F. French of Franklin, Vt.—When the musician wishes to execute a delicate passage upon the violin, he turns the bow over so that only the edge hairs will scrape the strings. The present improvement consists in attaching the ends of a few of the hairs, to a spring pin, placed in the handle of the bow; whenever a fine tone is wanted the operator compresses his hand and pushes out the pin, and thus separates, or throws out beyond their fellows, those hairs that are connected with the pin. The music produced by the separated hairs will be of the most delicate nature. By loosening the hand the pin instantly flies in and brings all the hairs properly together again. This improvement does not interfere with the straining of he bow.

Machine for making Sewing Silk.—By Lucius Dimock, of Hebron, Ct., and Ira Dimock of Mansfield, Ct.—In many kinds of stitching particularly that done by sewing machines, it is a matter of great importance to have the thread perfectly smooth and even. The ordinary silk is full of irregularities and small knots, often rendering its use in sewing machines quite troublesome. To avoid these difficulties, it is common to treble the thread and make it up into what is known as silk twist. The trebling operation consists in unwinding the single thread from a ball, and then looping it up so that three threads will come parallel; they are then twisted together, and form one thread. Machines for trebling have been long used, but the looping operation requires the assistance of an attendant, and the process is comparatively slow. The present improvement consists in making the machine self-acting; it unwinds the single thread from a ball, trebles, twists, and reels up the twist as fast as made. The various movements are executed with great rapidity, and the quality of silk produced is superior.

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TO CORRESPONDENTS.

A. E., of O.—Your order for the return of your patent will be necessary at the Patent Office. Write to the Commissioner that you conclude to abandon the application for additional improvements and that you wish your original patent returned to you by mail, and it will be forthcoming in due time.

We would advise you to correspond with T. H. Leavitt, Boston, Mass., concerning the introduction of your patent in that city.

A. H. B., of Mass.—There are machines in use for swedging solid balls, but we do not know of one employed for manufacturing Minie balls. They are all cast, we believe, as the mold requires a core to make the hollow chamber in each.

D. D., of Ohio.—It requires a more powerful battery for a long than a short telegraph line. A spring has been used to act against the momentum of a saw-gate. You can purchase a small battery for three dollars—their price is from a dollar and a half upwards, according to their size.

N. P., of Ind.—Are you sure that some scissors are made of cast-iron, combined with a steel edge? Is it not wrought iron? We have heard of cast steel and cast-iron being formed into one instrument by running the molten metal of both in the same mold, but we never saw a pair of scissors so made.

J. P. W. D., of Ill.—A machine operated by an electro-magnet, would be no more a perpetual motion than an engine propelled by steam.

J. B., of Ill.—There are no public premiums offered for perpetual motion inventions,—a perpetual motion machine is an impossibility. It must contain the elements of a self-sustaining power within itself. Do not spend time nor money on such notions. Being a mechanic you have neither time nor labor, nor money to throw away.

H. B. M., of Conn.—You can obtain six-horse power from the engine you describe, if the boiler is strong and can raise the steam to stand a pressure of 60 lbs. on the square inch.

J. R. C., of N. H.—The Report of the Coast Survey for 1854 is published. If you write to Prof. Bache he will give you the desired information.

O. W. W., of N. Y.—We have carefully examined the sketch of your wrench, and it appears to us to embrace novelty of a patentable character, You had better send us one of them.

J. P., of Ala.—Anti-friction rollers, as applied to journal boxes, are not new. They are old and well-known for that purpose.

H. E. S., of Iowa.—We have received so many letters on "what saws can do," that we cannot find room for half of them.

C. W. Jr., of N. Y.—As soon as we receive a note from Mr. T.'s attorney, of the time and place of his testimony being taken, we will notify you by mail.

P. D., of N. Y.—The common opinion that steam is visible, is erroneous; it is transparent, and not visible, it only becomes apparent to the vision when it mingles with the atmosphere.

E. C., of N. Y.—It requires nearly one horse-power to grind a bushel of grain in an hour. You would require a wheel of about five-horse power, which on a 25 feet fall would take 660 pounds of water per minute, for five bushels per hour. We cannot give you practical data regarding Frazee's saw. There is no first-rate work on millwrighting published.

E. H. B., of Me.—Your plan of returning the smoke of coal by a blower from the chimney, and forcing it through the fire, to consume it, is not new, nor is it a good plan, The smoke will roquire to be mixed with air or it will not ignite in the furnace, and this you have not provided for.

R. De V., of N. Y.—We understand that the acclimation of the Angora goat has been successful in South Carolina, and that an imported flock of four has increased to fifty in six years.

H. W. R., of Va.—Zincography is the art of printing with zinc plates in the same manner as with lithographic stones. Prints of engravings, &c., can be transferred to zinc plates, and printed therefrom. The printed engraving or copy is first moistened with diluted nitric acid, and then pressed, with considerable force, by a roller on a perfectly clear surface of zinc. By this means every part of the sheet of paper is brought in contact with the plates of zinc. The acid, with which the imprinted part of the paper is saturated, etches the metal, and the printed portion sets it off, so that the zinc surface presents a complete reverse copy of the work. The zinc plate, thus prepared, is washed with a solution of gum in weak phosphatic acid. The liquid is attracted by the etched surface, which it fully wets, while it is repelled by the oil of the ink in which the writing or drawing on the paper is traced. A roller covered with ink is then passed over the plate, when a converse effect en ues. The repulsion between the oil, ink, and the watery surface, over which the roller passes, prevents any soiling of the unfigured parts of the zinc plates: while the attraction between oil and oil causes the ink to be distributed over the printed portions. For coarse designs—such as plain surveyors maps, it is the cheapest method of printing known.

T. S., of Ohio—In some future number we may give you further statistics regarding Burden's big wheel.

Instructed—Gillespie's Surveying, published by D. Appleton & Co., this city, will give you the desired information. Any work on geometry will give you the necessary information regarding the measuring of timber.

H. W. C., of Mass.—The following is the method of bronzing plaster of Paris figures:—Make a varnish of isinglass, by dissolving a little of it in water, then lay it over the figure until every part of it is equally wet—When this is dry, go over the figure again with a little size, but let no more size be on the brush than that which may barely dampit; the figure will now have a shining appearance, when it will be fit to receive the bronze.—The bronze powder is dusted on with a little cotton wool and the figure is put past to dry, when all the loose powder is rubbed away.

L. A. B., of N. Y.—We have not the Secretary of the Treasury's report for 1855 on hand, therefore we cannot give the data desired respecting the manufactured and rough willow imported from abroad. We believe there must be some mistake in the Tribune's statement. The willow work sold in this city is mostly all manufactured by the French and Germans residing in the suburbs.—The value of willows imported in one year, as given in the American Almanac, only amounts to $23,000. We have no knowledge of the Tribune's statement.

B. C. C., of Texas—We have not heard of the publication of Morde Cai's report on military inspection in Russia. The Sci. Am. is sent to you regularly, and the irregularity results from the confusion of the mail in its frequent changes before it reaches you.

M. L., of Texas—Why do you not test the power of your steam on a current wheel having paddles one foot square. It would be easy for you to do this, and would be the most satisfactory to yourself. The current wheels used here have their floats placed radially; they are used for the tides, while yours would always run in the same direction.

Money received at the Scientific American Office on account of Patent Office business for the week ending Saturday, May 17, 1856:—

H. W., of N. Y., $25; A. R. H., of Pa., $25; J. B. C., of N. Y., $25; J. F. O., of Ala., $30; J. L. G., of Ga., $20; E. T., of N. J., $30; C. W. O'L., of Ga., $5; B. B., of N. Y., $100; C. O. L., of Ill., $25; J. DeS., of L. I., $30; H. A., of Conn., $25; H. B. C., of N. Y., $55; H. & E. W., of N. Y., $45: J. R., of Pa., $50; M. L. P., of Tex., $25; W. K. P., of Mass., $30; G. W. H., of N. Y., $25; J. B. R., of Ala., $1,100; D. F. B., of N. J., $25: J. H. W., of N. Y., $30; D. B., of N. Y., $39; D & B., of N. J., $30; A. B., of O., $60; G. & H., of Ill., $10; W. G. C., of O., $55: J. C. L., of Mich., $30; H. P., of O., $23; W. M. O., & B., of N. Y., $30; A. S., of N. Y., $250; T. A. D., of Cal., $25; J. W., of N. Y., $90; T. V., of Cal., $30: E. S. C., of Mass. $25: J. F. F., of Mass., $30; J. W. R., of Va., $30; C. W. G., of Conn., $30; J. C., of N. Y., $120; M. & R., of N. Y., $25; W. H. B., of Ind., $5; E. & G., of Vt., $55; J. B., of Ill., $30; J. M., Jr., of N. Y., $30.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, May 17:—

J. B. C., of N. Y.; H. A., of Conn.; A. R. H., of Pa.; C. O. L., of Ill.: J. B., of Ill.; M. L. P., of Tex.; J. R., of Pa. (2 cases); J. W., of Conn.; E. & H. W., of N. Y.; G. W. H., of N. Y.; M. & R., of N. Y.; D. & B., of Mich.; D. F. B., of Pa.: A. B., of O.; D. A. B., of O.; W. R. T., of O.; J. C., of N. Y.; W. H. B., of Ind.; D. & McN., of N. Y.; E. S. C., of Mass.; J. F. O., of Ala.

Important Items.

To the Unfortunate—We are no longer able to supply the back numbers of the present volume previous to No. 27, except from 1 to 12. Such numbers as we have to furnish, are gratuitously supplied to such subscribers as failed to receive them; and we would take occasion to state, that any person failing to receive their paper regularly, will confer a favor by notifying us of the fact. Missing numbers should be ordered early, to insure their receipt, as an entire edition is often exhausted within ten days after the date of publication.

Models—We shall esteem it a great favor if inventors will always attach their names to such models as they send us. It will save us much trouble, and prevent the liability of their being mislaid.

Patent Claims—Persons desiring the claim of any invention which has been patented within fourteen years can obtain a copy by addressing a letter to this office stating the name of the patentee, and date of patent when known, and enclosing $1 as fees for copying.

Receipts—When money is paid at the office for subscription, a receipt for it will always be given; but when subscribers remit their money by mail, they may consider the arrival of the first paper a bona fide acknowledgment of the receipt of their funds.

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IMPORTANT TO INVENTORS.

THE UNDERSIGNED having had Ten years' practical experience in soliciting PATENTS in this and foreign countries, beg to give notice that they continue to offer their services to all who may desire to secure Patents at home or abroad.

Over *three thousand* Letters Patent have been issued, whose papers were prepared at this Office, and on an average *fifteen*, or *one-third* of all the Patents issued each week, are on cases which are prepared at our Agency.

An able corps of Engineers, Examiners, Draughtsmen, and Specification writers are in constant employment, which renders us able to prepare applications on the shortest notice, while the experience of a long practice, and facilities which few others possess, we are able to give the most correct counsels to inventors in regard to the patentability of inventions placed before us for examination.

Private consultations respecting the patentability of inventions are held free of charge, with inventors, at our office, from 9 A. M., until 4 P. M. Parties residing at a distance are informed that it is generally unnecessary for them to incur the expense of attending in person, as all the steps necessary to secure a patent can be arranged by letter. A rough sketch and description of the improvement should be first forwarded, which we will examine and give an opinion as to patentability, without charge. Models and fees can be sent with safety from any part of the country by express. In this respect New York is more accessible than any other city in our country.

Circulars of information will be sent free of postage to any one wishing to learn the preliminary steps towards making an application.

In addition to the advantages which the long experience and great success of our firm in obtaining patents present to inventors, they are informed that all inventions patented through our establishment, are noticed, *at the proper time*, in the Scientific American. This paper is read by not less than 100,000 persons every week, and enjoys a very wide spread and substantial influence.

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CLOCKS for Churches, Court Houses, &c. Regulators and time pieces for jewelers, railroads, offices, &c. Also glass dials of any size for illuminating, and other kinds manufactured and warranted by the subscriber.—JOHN SHERRY, Oakland Works, Sag Harbor, N. Y. 37 12 eow

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IMPROVED WRISTBAND FOR SHIRTS—Patented in this country, England, and France—see engraving and description in Sci. Am. of May 10th. The peculiar merit of this invention consists in the simple but ingenious formation of combining two wristbands in one, to be used alternately. Its advantages are additional neatness, convenience, and economy, which must insure its general adoption. It is now presented for consideration to the manufacturer and capitalist. R. K. CHANDLER, of Richmond, Va., the inventor, is now at Astor House, New York. 1*

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FOR SALE—One of the best located shops in the State for manufacturing light articles, machinery, models for patents, die work, jobbing, &c. The said shop is in the center of the city, well lighted, good power, with a good run of business. I will sell the tools with business, &c., at a reasonable rate. Address LEWIS WHITE,
1* No. 10 Trumbull st., Hartford, Conn.

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36 3* Kalamazoo. Mich.

FORBES & BOND, Artists, 89 Nassau st, N.Y., Mechanical and general Draughtsmen on wood, stone, &c.

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THE UNPARALLELED DEMAND for those superior Machinists Tools have caused the undersigned to remove their works permanently to buildings No. 475, 477, and 479 First Avenue, near 29th St., N. Y., where will be found on hand or made to order at shortest notice machinists tools of every variety and capacity warranted equal to the best in market, and terms moderate: also a quantity of second-hand tools.
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WANTED—A situation by a practical machinist as foreman or manager of a machine shop, who has had several years experience in building stationary steam engines, mills, furnace, and pumping machinery; also understands drawing. Would be willing to take an interest in works doing a good business. References given.—Address E. SHIPLEY, Louisville, Ky. 35 3*

W. P. N. FITZGERALD, Counsellor at Law—late Principal Examiner in the U. S. Patent Office—has removed from Washington, D. C. to the city of New York, 271 Broadway, (corner of Chambers St.) As heretofore, his practice is confined to Patent Cases, which he will prosecute or defend, as counsel, before the Supreme and Circuit Courts of the United States, also before the Patent Office, or the Judges having jurisdiction of appeals therefrom. 29 1amtf

PORTABLE STEAM ENGINES.—S. C. HILLS, No. 12 Platt st., N. Y., offers for sale these Engines, with Boilers, Pumps, Heaters, etc., all complete, and very compact, from 2 to 10 horse power, suitable for printers, carpenters, farmers, planters, &c. A 2 1-2 horse can be seen in store, it occupies a space 5 by 3 feet, weighs 500 lbs., price $240; other sizes in proportion. 27 e3w

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F. S. PEASE, 61 Main st., Buffalo, N. Y.
N. B.—Reliable orders filled for any part of the United States and Europe. 33 tf

NORCROSS ROTARY PLANING MACHINE.—The Supreme Court of the U. S., at the Term of 1853 and 1854, having decided that the patent granted to Nicholas G. Norcross, of date Feb. 12, 1850, for a Rotary Planing Machine for Planing Boards and Planks is not an infringement of the Woodworth Patent.

Rights to use the N. G. Norcross's patented machine can be purchased on application to N. G. NORCROSS, 208 Broadway, New York.

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AGENCY FOR THE PURCHASE AND SALE of valuable patents and inventions, T. H. LEAVITT, No. 1 Phœnix Buildings, Boston. None but matters of real merit and utility will receive any attention. Circulars containing further information may be had on application. 29 12*

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Science and Art.

Sours or Acids.

The sourness of the juice of a lemon and the acidity of vinegar are so well known that the mere mention of them is sufficient to convey a knowledge of the chief qualities of sours or acids in their natural state. There are so many acids that two or three pages of an index to a chemical book are taken up in enumerating them. Every fruit contains an acid; nearly all the metals are capable of forming acids. When coal, wood, paper, rag, charcoal, brimstone, phosphorus, and many other substances are burned, acids are produced. A flint stone is an acid. There is an acid in our window glass, and in many of the most costly precious stones. The air we breathe contains an acid. We create an acid in the lungs by the act of breathing. By a very slight change sugar can be converted into oxalic acid, which is a strong poison. Sugar, by another change, is converted into vinegar. These two illustrations show that a sweet can be converted into a sour; but when sour fruit becomes sweet it proves almost to demonstration that a sour can become a sweet acid.

The most powerful acid is that derived from burning sulphur—it is called sulphuric acid, and is one of the most important articles of manufacture. Its acidity is so great that a tea-spoonful is sufficient to make a pailfull of water quite sour. Nitric acid, obtained from niter, or saltpeter, is of the next importance in the arts; it is so corrosive that it has long been distinguished by the name of *aqua fortis*, that is, strong water—strong, sure enough, for a nodule of iron, lead, or silver, dissolves in it like sugar placed in water. From the number of acids which we find in nature, and the tendency of many artificial substances to become sour' it is evident that acids and sours are essential to our life and well being. Acids assume all forms and colors; some are liquids, some gaseous, others solid. The acids of fruits, when separated from the grosser particles that accompany them, are very beautiful and crystalizable substances. By the ingenuity of the chemist the sour of unripe apples grapes, tamarinds, lemons, &c., may be crystalized into beautiful snow-white bodies, which, however, when touched by the tongue, at once indicate their origin by their flavor.

SEPTIMUS PIESSE.

Coal Mines Lighted with Gas.

Some months ago we noticed an ingenious suggestion made by Mr. Septimus Piesse for illuminating mines by means of coal gas. This suggestion has lately been acted upon in Mr. Ackroyd's pits in Yorkshire, and the experiment has been so successful that the general adoption of this improvement is anticipated throughout the mining districts of the West Riding, of Yorkshire, England.

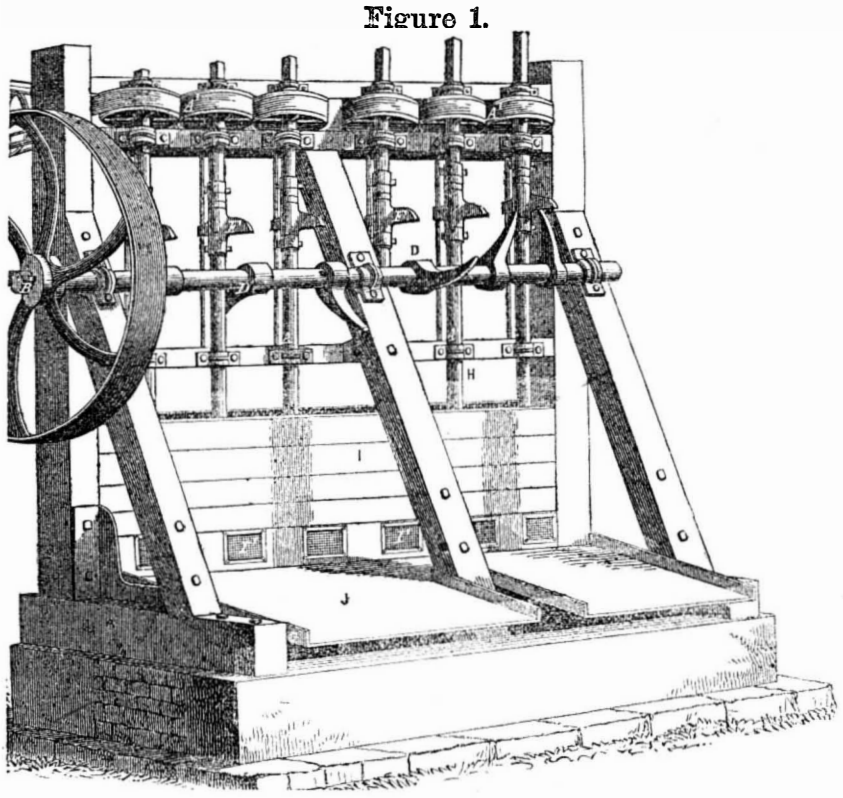
Improved Gold Amalgamator and Quartz Crusher.

Our engravings illustrate the inventions of Mr. Samuel Gardiner, Jr., of No. 212 Broadway, New York City. Figures 1 and 2 exhibit the quartz crusher, and fig. 3 the amalgamator.

In fig. 1 there is a long box, I, into which the gold bearing quartz is thrown, in lumps, to be crushed or pounded up into fine dust. The crushing is done by means of a row of pestles or stampers, and mortars placed within the box, I. A are the stampers, furnished at their upper ends with pulleys, A', by which they are rotated; at their base (fig. 2) they have heavy stamp heads, C, and chilled plates set into the mortars, E. The stampers, C', which are lifted by means of the cams, D, on shaft B. When B revolves, the cams, D, meet the projections, F, on the stampers, lift and then drop the latter. The operation is one of great rapidity; the stampers each weigh with their heads 650 lbs., so that their crushing power is very great. The quick revolving motion given to the stampers, at the same time that they rise and fall, tends to grind the quartz, and assist the pulverization. A constant stream of water flows into the box, I, which escapes and carries with it the quartz as fast as it becomes sufficiently pulverized, through the

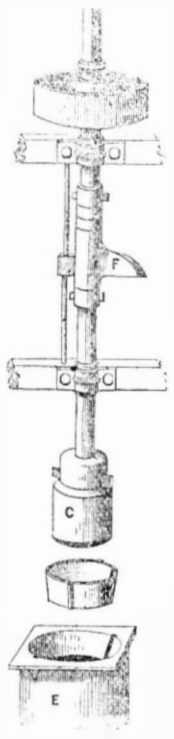
IMPROVEMENT IN GOLD SEPARATING MACHINES.

Figure 1.



gauze apertures, or sieves, I', on to he inclined plane, J.

Figure 2



From the inclined plane, J, the quartz dust and water is conveyed to the amalgamator (fig. 3,) entering through the inclined spout, H, and falling upon the amalgamating rollers, *d*, and from them upon the larger amalgamating rollers, D. B B' are troughs containing quicksilver, in which the rollers, *d* D, respectively rotate, and thus have their surfaces kept continually coated with mercury; the quartz water is thus doubly brought into contact with the quicksilver, and complete amalgamation takes place. Below the machine is an inclined plane, K, called the ripple box, upon which the water falls, after leaving the lower cylinders. Should any gold remain in the water it will be arrested by the pockets in K.

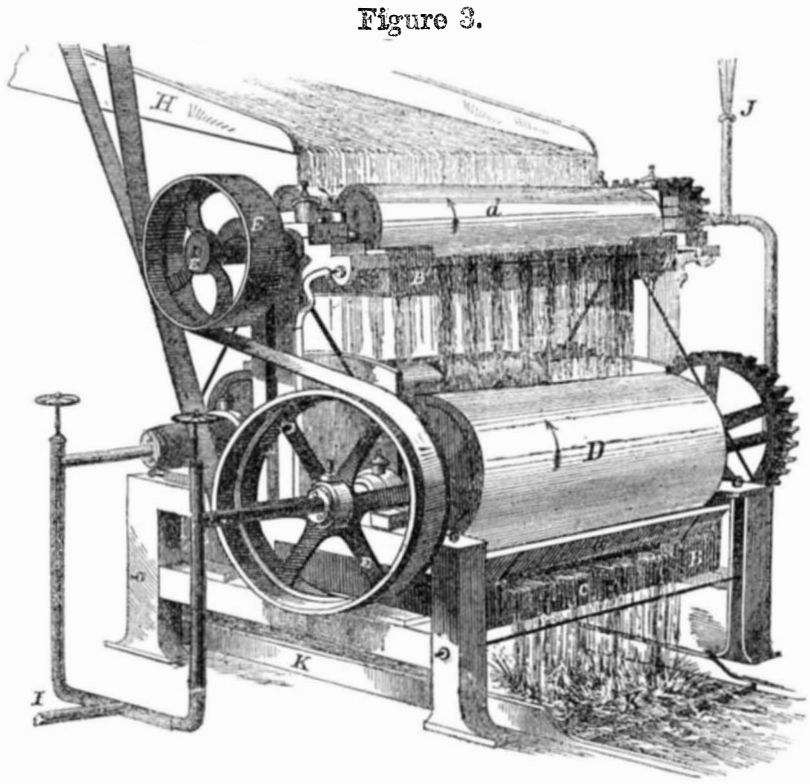
The large cylinders, D, are hollow, and heated by means of steam introduced through their journals from steam pipe I. The effect of the heat is to render the mercury more active in amalgamating with the gold. If heated to 212°, the mercury will absorb five times more gold than at 60°. This shows the importance of warming the cylinders. We do not remember to have seen any other amalgamating machine in which practical advantage is taken of the above mentioned property of quicksilver.

We are told that the quartz dust can be exposed to over 6000 square feet of quicksilver surface per minute, in one of these machines; this is on a calculation of 40 revolutions per minute for the large cylinders, and includes the surface presented by the quicksilver in the troughs, while the quartz water passes through the same. The ore and water pass between and under the cylinders in a thin sheet, which is regulated by a set screw: this also gauges the amount of ore desired to pass through the amalgamator. Ten tuns of ore, it is said, can be amalgamated per day by a single machine.

The crusher, with six stampers, we are informed, will reduce a tun of quartz per hour. The revolving motion of the stamper heads causes them to wear evenly; when too much worn they may be taken off, each separately and a new one put on, without stopping the machine; each stamper is arranged independently of the others.

The inventor states that this invention has been thoroughly tested at the mines, and operates with great economy and superiority. Full sized machines may be seen in operation at the Morgan Iron Works, in this city. Further information can be had of the patentee. Patented July 25, 1854.

Figure 3.



Gas Tar for Manure.

A Mr. Atkinson, near Durham, England, has recently been experimenting with coal tar on potatoes. The tar was mixed with manure for some time before it was applied, and the crops produced were excellent. We would not, however, advise any of our farmers to use coal tar with their manure on fields, until they have made full experiments for themselves. We allude to this at present, because this is the period when many farmers commence experimenting for the season with manures.

Fish with Legs.

The Rochester *Union*, N. Y., states that Dr. Langworth, of that city, has obtained specimens of fish with four legs from a stream of water near Fort Defiance, in New Mexico.—They are about seven inches long, and resemble a young codfish; the legs are like those of an alligator. They have been sent to Professor Agassiz, at Cambridge, Mass.

A considerable quantity of cork oak acorns were imported this season by the Patent Office and distributed in the Middle and Southern States. These acorns are from the south of France.

MECHANICS

Inventors, and Manufacturers

ELEVENTH YEAR

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